The Goulstonian Lectures
ON
THE CHEMISTRY AND PATHOLOGY OF GOUT.

Delivered before the Royal College of Physicians of London,

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LECTURE III.[1]

Delivered on March 30th.

CAUSES AFFECTING THE DEPOSITION OF SODIUM BIURATE.

Deposition encouraged by concentration of medium and proportions of sodium salts present.—Sir William Roberts found that sodium biurate is very sparingly soluble in blood serum; at blood heat the amount dissolved is about 1 part in 10,000 (about one-tenth of its solubility in water). This lessened solubility is entirely due to the saline ingredients of the serum, as on depriving the serum of its salts by dialysis it was then found to exercise the same solvent action on the biurate as simple water. Sir William Roberts found that the sodium salts especially diminish the solvent power of a medium on sodium biurate, and that this diminished power is mainly, if not entirely, due to the sodium, and is apparently not much, if at all, influenced by the acids combined with it, since solutions of sodium bicarbonate, chloride, sulphate, phosphate, and salicylate, prepared so that the percentage of sodium in them was the same, exhibited the same solvent action. His experiments also show that if a medium be rich in urates, but poor in sodium salts, its tendency to precipitation is feeble, and *vice versâ*. Since structures belonging to the connective tissue class are rich in sodium salts and are also liable to uratic deposits, while muscle, brain, liver, and spleen are poor in sodium salts and not liable to uratic deposits, he considers that the proportion of sodium salts in a tissue is an important factor in determining the deposition of urates in that tissue. Another factor, according to this authority, in facilitating the precipitation of urates is to be found in the synovial fluid. Sir William Roberts's view is that the uratic precipitation actually takes place from the synovial fluid, and does not originate in the cartilaginous substance. This view is based in part on the microscopic appearance of vertical sections of gouty cartilage, in which the deposit is seen to be greatest on the synovial surface of the cartilage and to become gradually sparser and sparser towards the deeper layers, and in part on the fact that synovial fluid has been repeatedly found heavily laden with crystals of sodium biurate. He considers (as opposed to Ebstein's view) that the process of deposition in the cartilage is a purely passive and physical one, and that the synovial fluid, charged with its dissolved urate, penetrates by liquid diffusion into the superficial layers of the cartilage, and that when the critical moment arrives precipitation takes place simultaneously in the synovia and in the cartilage. According to this view the after consequences are entirely secondary, and are due to inflammation set up by the presence of the foreign body in the tissue.

As regards the varying liability of different joints to gouty attack, Sir William Roberts considers that it is, at all events in part, dependent on a greater concentration of the synovia of some joints and on a variable proportion of sodium salts and possibly of sodium biurate. The experiments made by Frerichs[2] on the comparative composition of the synovia of animals leading idle or active existences somewhat support this view. Frerichs found that the synovia of stall-fed horses and oxen leading an idle existence was more watery and contained a larger proportion of sodium salts than the synovia of similar animals doing work or roaming in the meadows. Moreover, the joints of the idle animals contained twice as much synovia as the joints of similar animals taking active exercise.

Deposition encouraged by sluggish movement of medium.—It is highly probable that the very sluggish movement of fluids in the cartilaginous and fibrous tissues favours the deposition of urates from the medium in which they are dissolved. As illustrating the fact that whatever interferes with the movement of the animal fluids favours the production of gouty symptoms and of an attack of gout itself, an interesting case has been recorded by Charcot,[3] who observed, in a hemiplegic woman aged forty years, that most of the articular cartilages on the right (paralysed), side were infiltrated with urates, whereas those of the non-paralysed side showed no such deposits. Sir William Roberts considers that the chief reason why in the post-mortem room the cartilages figure more prominently than the fibrous structures as the seat of deposition of sodium biurate is to be found in the fact that in the fibrous tissues there is a comparatively free lymph flow, which exercises a more effective solvent action on uratic deposits than can be effected by the sluggish lymph flow in the cartilages. With regard to the reason or reasons that gouty precipitation takes place preferentially in synovia rather than in the serum of blood and lymph, Sir William Roberts considers that the motionless condition of synovia as compared with the state of rapid movement of blood and lymph would give to synovia a priority in uratic precipitation. In addition, it is possible that, as Sir Alfred Garrod suggests, there is some special attraction in the joints for uric acid.

Deposition encouraged by nervous influences.—It is possible, given the condition in which there is a fair amount of sodium quadriurate or biurate circulating in the blood, the amount not being quite up to saturation point, that nervous influences may accelerate deposition of sodium biurate. It is well known that whatever produces depression of the nervous system, such as excessive exercise carried to the point of fatigue, rage, fright, worry, excitement, or venereal excess, may cause an attack of gout in a gouty subject. It appears to me that a possible explanation of this result is that nervous influence affects the kidneys and depresses their excretory power for uric acid, which is consequently absorbed into the general circulation and rapidly raises the quantity of urate in the blood to the point of over-saturation. Probably the well-known effect of an exposure to cold inducing a paroxysm of acute gout is due to a similar cause.

Deposition encouraged by abnormal constituents of the blood.—As previously stated, in cases of chronic lead poisoning there is a deficient excretion of uric acid in the urine and an accumulation of it in the blood. As to the actual way in which the lead favours or hastens the deposition of sodium biurate and so produces gout there are different opinions. Sir William Roberts[4] considers that it is difficult to believe that lead poisoning produces the same constitutional diathesis as that which exists in true gout, and prefers to think that, while gout and plumbism differ in all other respects, they have one tendency or vice in common—namely, the tendency to uratosis—that is, to the deposition of sodium biurate. He considers it is more accurate, instead of speaking of *ordinary gout* and *saturnine gout*, to speak of *gouty uratosis* and *saturnine uratosis*. It appears to me that gout and plumbism have more in common than this tendency to uratosis in that they both have the same tendency to cause the presence of an excess of urates in the blood. The association of lead poisoning with gout has been repeatedly observed, but Oliver[5] states that in the North of England this intimate relationship between gout and lead poisoning is not seen. He is not satisfied that the reason why gout is so little known in the North as a symptom of lead poisoning, while it is so common in the South, is entirely due to the difference in the drinking habits of the people—whisky being the general alcoholic drink in the North and malt liquor in the South. At the same time he confesses his inability to offer any further explanation.

I am of opinion that the influence of lead in producing gout depends solely on the extent to which the kidney parenchyma is damaged. With much damage done to the kidney cells, whose function it is to excrete uric acid, absorption of quadriurate into the blood occurs; the subsequent development of an attack of gout entirely

[1] Lectures I. and II. were published in THE LANCET of March 27th and April 3rd, 1897, respectively.
[2] R. Wagner's Handwörterbuch der Physiologie, 1884, Band iii., part i., pp. 463-466.
[3] Maladies des Vieillards et les Maladies Chroniques, 1874.
[4] Transactions of the Medical Society, vol. xiv., p. 88.
[5] Goulstonian Lectures on Lead Poisoning, THE LANCET, March 7th, 14th, and 21st, 1891.

depends on the amount of absorbed quadriurate, which in its turn depends on the amount of kidney mischief.

Deposition encouraged by injury to joints or by interference with their nutrition.—A slight injury to a joint, which in a healthy person would speedily pass off, in a gouty person renders the part susceptible to the deposition of sodium biurate if sodium quadriurate be circulating in the blood. This susceptibility is probably in some way connected with an impairment of the nutrition of the affected tissues. Fagge, indeed, regarded a paroxysmal attack of gout in the light of an accident occurring in the course of an essentially chronic change in the joint affected.

As regards the relation between gout and rheumatism, Sir Alfred Garrod has remarked that if gout supervenes in individuals who have suffered from rheumatism it is generally the articulations which had been affected before that are attacked first; so that joints which have been the seat of acute rheumatism are especially predisposed in gouty subjects to become the seat of uratic deposits. Dr. Latham[6] thinks it is probable that the uric acid circulating in the blood might exert a toxic effect on certain portions of the spinal cord which control the nutrition of the joints, and so cause nutritive changes or inflammation in the joints connected with that portion of the cord; as a result of the inflammation or nutritive changes in the joints sodium biurate is deposited in them or in the tissues around the affected joints. Ebstein[7] considers that deposition of sodium biurate is dependent on, and is produced by, previous necrosis of the affected tissues, and that the uratic deposit never occurs in a normal tissue. His view is that the neutral sodium urate circulating in the blood acts as an irritant and produces necrosis of the cartilages or other tissues, in which the sodium is subsequently deposited; as a result of this necrosis he considers that an acid is developed which converts the neutral urate into acid urate, which compound is then deposited in the necrosed areas. I have already fully stated the objections to this theory. Klemperer[8] does not consider that uric acid is responsible for the necrotic changes in tissues, nor that the phenomena of gout can be due to mere crystallisation of sodium biurate from the blood, because in leucocythæmia, where an excess of urate is present in the blood, neither local necrosis nor uratic deposits occur. He believes that some unknown substances in gout lead to inflammatory and necrotic processes in various tissues; these necrotic areas then attract the uric acid from the blood, the chemical affinity of the necrotic parts for uric acid being so great that the blood cannot re-dissolve it. Von Noorden thinks the unknown substance which starts the inflammatory and necrotic processes, is a ferment, and that the uric acid crystallises out in the necrotic tissues.

Deposition encouraged by diminished alkalinity of the blood.—Various writers have put forward the opinion that uratic deposition is dependent upon a diminution of the alkalinity of the blood. Mordhorst[9] considers that the tissues affected by gout are less alkaline than the blood, and that if the alkalinity of the latter becomes lowered then deposition may take place. Dr. Haig considers that diminished alkalinity of the blood causes deposition of uric acid in the liver, spleen, fibrous tissue, and joints, and that increased alkalinity of the blood causes its re-solution. The view that diminished alkalinity of the blood causes uratic deposition and that increased alkalinity of the blood causes re-solution of the uratic deposits is in my opinion erroneous and untenable for the two following reasons: (1) The view is apparently based on the supposition that the deposit is uric acid, whereas it is sodium biurate, the solubility of which, as Sir William Roberts has shown, is not increased by increased alkalinity of the blood; and (2) from a series of experiments that I have conducted, and which will be subsequently described, it appears that a diminution of the alkalinity of a medium does not affect the deposition of sodium biurate from that medium.

Reasons for the special selection of the great toe and ear as seats of gouty deposits.—There are several reasons to account for the special causation of uratic deposits in the great toe: (1) there is the liability of the metatarso-phalangeal joint to injury from having to support the weight of the body and from being subjected to sudden shock; (2) the remoteness of the joint from the heart and the force of the circulation being consequently at its minimum at that part; and (3) the poor vascularity of the tissues of the joint. The liability of the joint to injury is shown by Sir Alfred Garrod's examinations of the great toe joints of 20 subjects known not to have had gout. In 14 he found ulceration of the cartilages of one or both joints. Of these 20 subjects, 3 were under thirty years of age and showed no ulceration of the cartilages; the remaining 17 were over thirty years of age, and of these 14, or 82 per cent., showed ulceration of the cartilages. All the subjects over fifty years of age showed ulceration. In the helix of the ear the sluggish circulation and the coldness of the organ are quite sufficient to account for the frequency with which uratic deposits are formed in that part.

Cause of the inflammation which accompanies the gouty paroxysm.—The gouty paroxysm is due to precipitation of sodium biurate, which always takes place in crystalline form, the crystals being distributed through the implicated tissue in the form of delicate needles, aggregated into tufts, bundles, and stars. When deposition occurs in cartilage the crystalline deposit acts as an irritant and causes inflammation leading to proliferation and necrosis of cartilage cells, which may be followed by erosion of cartilage and of uratic deposits and consequent displacement of the latter into the cavity of the joint. Along the borders of the cartilage, where the deposits are comparatively small and the tissues are relatively rich in capillary vessels, the inflammatory processes may produce a more luxuriant growth of the cartilage cells, resulting in the formation of ecchondroses at the margins of the articulation. Although I consider that the inflammatory part of the gouty attack is secondary to the deposition of sodium biurate crystals, yet it must be granted that such deposition should occur fairly copiously and suddenly in order to start the inflammatory process. Undoubtedly urates may deposit slowly and quietly in joints without the development of any acute attack, or for some time antecedent to the development of an acute attack. The observations of Moxon and Fagge support the conclusion that the discovery after death of uratic deposits in a joint is not always to be regarded as a certain proof that the joint has passed through an inflammatory gouty attack. Sir Alfred Garrod's views, which are shared by Sir William Roberts and supported by abundant evidence, are in favour of the deduction that the deposition of crystalline biurates is not merely an accompaniment, but is the direct cause of the joint troubles of gout. It is therefore of practical importance to know what are the various factors or conditions which may influence the conversion of sodium quadriurate into biurate, which may alter the solubility of sodium biurate in the blood, lymph, and synovia, and which may affect the precipitation of the sodium biurate.

CERTAIN CONDITIONS AND FACTORS AFFECTING THE SOLUBILITY AND THE PRECIPITATION OF SODIUM QUADRIURATE AND SODIUM BIURATE.

Diminution of the alkalinity of the blood.—It is well known that an attack of gout may be accelerated by ingestion of food or beverages harmful either as regards their quality or quantity. Such substances may exert a direct or indirect chemical action which facilitates the precipitation of sodium biurate—this is the chemical view; or they may possibly exert a physical action only in hastening such precipitation—this is the mechanical view. A view to which I have previously referred, which is commonly held as to the influence of diet and certain beverages in accelerating an attack of gout, is that such substances reduce the alkalinity of the blood and so hasten the precipitation of sodium biurate. As I believe this view to be erroneous I will ask your attention to a consideration of my reasons for holding this opinion. It is remarkable what a number of writers incline to the view that diminution of the alkalinity of the blood causes the deposition from it of sodium biurate, and that a subsequent rise in alkalinity causes solution of the previously formed deposits. It is assumed that a nitrogenous animal diet diminishes the alkalinity of the blood and so causes deposition of sodium biurate. It is also assumed that a similar result is caused by the acids contained in wines and beers, and that the pains in the joints that frequently occur in gouty subjects soon after taking certain wines or beers are due to deposition of biurate following on the reduction of the alkalinity of the blood by the acid so introduced. Now, in the first place, is there any substantial proof that the alkalinity

[6] Croonian Lectures, THE LANCET, April 3rd, 10th, 17th, and 24th, and May 1st, 1886.
[7] Die Natur und Behandlung der Gicht, 1882.
[8] Deutsche Medicinische Wochenschrift, 1895, Band xxi., p. 655.
[9] Verhandlungen des Congresses für Innere Medicin, 1896, p. 405.

of the blood is much reduced in connexion with gout? Careful experiments by Klemperer[10] that have recently been conducted show that the alkalinity of the blood of gout is but very little, if at all, diminished, and that corresponding variations in the alkalinity may frequently be met with in healthy individuals. There is certainly no good ground for the belief that an "acid dyscrasia" underlies the gouty condition. Recent researches show that a diminution of the alkalinity of the blood is a common pathological condition in diseases that are in no way associated with uratic precipitation, such as acute rheumatism, leukæmia, diabetes, carcinoma, and pyrexia. In the second place I have been unable to meet with any experimental proof that a diminution in the alkalinity of blood containing uric acid in solution either facilitates the deposition of sodium biurate from it or diminishes its solvent power for sodium biurate or for uric acid. I therefore considered it advisable to experimentally investigate these different points, and for that purpose the following series of experiments was undertaken.

I. *Experiments showing to what extent the rate of formation and precipitation of sodium biurate is affected by diminishing, by the addition of acids, the alkalinity of blood serum charged with uric acid.*—Seven bottles, each containing 40 c.c. of blood serum, were raised to 100° F. and then charged with uric acid to the extent of 1 in 1000. As soon as the uric acid was dissolved varying quantities of hydrochloric acid were added to the contents of three of the bottles, and of tartaric acid to another three, so as to partially reduce the alkalinity of the serum; the contents of the seventh bottle were left unaltered. The bottles were kept in a warm chamber at 100° F., and the commencement of the precipitation of sodium biurate crystals was then looked for by examining some of the contents of the bottles under the microscope every few minutes so as to note the time when the formation of biurate crystals commenced. The quantities of hydrochloric acid added to the contents of three of the bottles were such as to neutralise respectively three-fourths, one-half, and one-fourth of the alkalinity of the serum remaining after solution of the uric acid. To the other three bottles corresponding quantities of tartaric acid were added to produce similar results. The following tables (Table V. and Table VI.) show the results of these experiments.

TABLE V.—*The Results of Experiments made with Blood Serum charged with Uric Acid to show the effect which the Diminution of the Alkalinity of the Serum by the addition of Hydrochloric Acid has on the Precipitation of Sodium Biurate.*

Solution.	Commencement of precipitation.
Blood serum containing 1 in 1000 uric acid	Crystals of sodium biurate first appeared in from 6 to 7 hours.
The same one-fourth neutralised by hydrochloric acid	
The same one half neutralised by hydrochloric acid	
The same three-fourths neutralised by hydrochloric acid	Some crystals of uric acid appeared in 5 minutes. Crystals of sodium biurate first appeared in 12 hours.

It will be seen from the results of these experiments that the effect of diminishing the alkalinity of blood serum as far as one half has no influence whatever in hastening the conversion of the sodium quadriurate into biurate, or, in other words, does not influence the deposition of sodium biurate from the serum. When the alkalinity is reduced by three-fourths by the addition of hydrochloric acid some crystals of uric acid were almost immediately precipitated, but when this precipitation of uric acid had ceased then the deposition of sodium biurate did not begin till twelve hours had elapsed. The reason that the deposition of sodium biurate was delayed a longer time than in the cases of the serum the alkalinity of which was reduced respectively by one fourth and one-half was that the removal of some of the uric acid rendered the solution of sodium quadriurate weaker, and, as has been pointed out by Sir William Roberts, the amount of uric acid in solution exercises a very important influence on the rate of maturation of the quadriurate and on the advent of precipitation of the biurate. This early shower of uric acid crystals that occurred when sufficient hydrochloric acid was added to the blood serum to neutralise three-fourths of its alkalinity has no bearing whatever on the chemistry of the gouty attack, since the gouty deposit always consists of sodium biurate and never of uric acid. The following table shows the results of the experiments with tartaric acid and blood serum.

TABLE VI.—*The Results of Experiments made with Blood Serum charged with Uric Acid to show the Effect which the Diminution of the Alkalinity of the Serum by the Addition of Tartaric Acid has on the Precipitation of Sodium Biurate.*

Solution.	Commencement of precipitation.
Blood serum containing 1 in 1000 uric acid	Crystals of sodium biurate first appeared in from 6 to 7 hours.
The same, one-fourth neutralised by tartaric acid	
The same, one-half neutralised by tartaric acid	
The same, three-fourths neutralised by tartaric acid ...	

From these experiments it is evident that even the reduction of the alkalinity of blood serum by three-fourths has no influence in hastening the precipitation of sodium biurate from blood serum impregnated with uric acid. The view, therefore, that a diminution of the alkalinity of the blood promotes an attack of gout by favouring the deposition of sodium biurate is, in my opinion, untenable. In order to give an idea of the amount of acid that would be required to reduce the alkalinity of the blood of an adult human being by three-fourths I made the following estimation and calculation. I found that the acidity of some 1847 port, reckoned as tartaric acid, was equal to six grains of acid to the wineglassful. In order to neutralise three-fourths of the alkalinity of the blood serum of a man of average weight it would be necessary that all the acid contained in two bottles of such port should be introduced at one moment into the circulation. It appears to be very doubtful indeed whether there really is any appreciable diminution of the alkalinity of the blood in gout. Klemperer[11] examined the alkalinity of the blood in three gouty cases and found that it was only slightly diminished. He found a much more conspicuous diminution of alkalinity in other morbid conditions which are not associated with the deposition of sodium biurate.

II. *Experiments to show the solvency of uric acid in blood serum the alkalinity of which has been reduced by the addition of an acid.*—The effect of hydrochloric and tartaric acids respectively was investigated. As will be seen from the results, there is a remarkable difference in the solvent power of partially neutralised blood serum for uric acid accordingly as its alkalinity is reduced by the addition of hydrochloric or tartaric acids. The experiments were carried out in the following manner. Four bottles containing 25 c.c. each of blood serum were taken; three of them were treated respectively with different quantities of hydrochloric acid so as to reduce the alkalinity of the serum in one case by one-fourth, in the second case by one-half, and in the third case by three-fourths; the contents of the remaining bottle were left untouched. The bottles were placed in the warm chamber till their contents were at 100° F., and then an excess (from 60 to 70 milligrammes) of uric acid was added to each. They were kept in the warm chamber for two hours, during which time they were frequently agitated; the contents of the bottles were then filtered from undissolved uric acid, and the dissolved uric acid in each filtrate was estimated. The following table shows the results.

TABLE VII.—*Showing the Solubility of Uric Acid at 100° F. in Unaltered Blood Serum and in Blood Serum the Alkalinity of which is Proportionately Reduced by the Addition of Hydrochloric Acid.*

Solvent.	Uric acid dissolved.
Unaltered serum	2·03 per 1000
Serum one-fourth neutralised by hydrochloric acid	1·48 ,,
Serum one-half neutralised by hydrochloric acid	1·00 ,,
Serum three-fourths neutralised by hydrochloric acid	0·45 ,,

Similar experiments were carried out using tartaric acid in the place of hydrochloric acid. The following table shows the results.

[10] Deutsche Medicinische Wochenschrift, 1895, Band xxi., p. 655.

[11] Deutsche Medicinische Wochenschrift, 1895, Band xxi., p. 655.

TABLE VIII.—*Showing the Solubility of Uric Acid at 100° F. in Unaltered Blood Serum, and in Blood Serum the Alkalinity of which is Proportionately Reduced by the addition of Tartaric Acid.*

Solvent.	Uric acid dissolved.
Unaltered serum	2·03 per 1000
Serum one-fourth neutralised by tartaric acid	2·01 ,,
Serum one-half neutralised by tartaric acid	2·01 ,,
Serum three-fourths neutralised by tartaric acid	2·02 ,,

It is seen from the results of these experiments that if the alkalinity of blood serum is reduced by the addition of hydrochloric acid the solvency of the serum for uric acid is correspondingly altered. This is what one would expect, since the conversion of some of the sodium bicarbonate of the serum into sodium chloride renders that portion of the sodium unattainable by the uric acid and prevents the solution of a corresponding amount of the latter as sodium quadriurate. Such a result, however, does not follow the reduction of the alkalinity of the serum by the addition of an organic acid such as tartaric acid. It will be seen that serum, the alkalinity of which is reduced respectively by one-fourth, one-half, and three-fourths, practically does not vary at all as regards its solvency for uric acid. The explanation, no doubt, is that the uric acid is able to displace the tartaric acid from its combination with sodium and utilise the sodium of the tartrate as readily as the sodium of the bicarbonate to form the soluble sodium quadriurate. Since the acidity of wines is due to organic acids (mainly tartaric, malic, and succinic acids) it would seem very doubtful, judging from the results of these experiments, whether, even if any alteration in the alkalinity of the blood were produced by the drinking of acid wines, the solubility of uric acid in such blood could be affected in the slightest degree.

III. *Experiments to show the solvency of sodium biurate in blood serum the alkalinity of which has been reduced by the addition of an acid.*—The effect of hydrochloric and tartaric acids respectively was investigated. The experiments were carried out in a similar manner to those just described, except that an excess of sodium biurate was substituted for the uric acid and the digestion with the sodium biurate was carried on at 100° F. for five hours. The following tables show the results.

TABLE IX.—*Showing the Solubility of Sodium Biurate at 100° F. in Unaltered Blood Serum, and in Blood Serum the Alkalinity of which is Proportionately Reduced by the Addition of Hydrochloric Acid.*

Solvent.	Sodium biurate dissolved.
Unaltered serum	0·05 per 1000
Serum one-fourth neutralised by hydrochloric acid	0·05 ,,
Serum one-half neutralised by hydrochloric acid	0·07 ,,
Serum three-fourths neutralised by hydrochloric acid	0·10 ,,

These results show that sodium biurate is slightly more soluble in serum which has been partially neutralised by the addition of hydrochloric acid than it is in unaltered serum.

TABLE X.—*Showing the Solubility of Sodium Biurate at 100° F. in Unaltered Blood Serum, and in Blood Serum the Alkalinity of which is Proportionately Reduced by the Addition of Tartaric Acid.*

Solvent.	Sodium biurate dissolved.
Unaltered serum	0·05 per 1000
Serum one-fourth neutralised by tartaric acid	0·08 ,,
Serum one-half neutralised by tartaric acid	0·08 ,,
Serum three-fourths neutralised by tartaric acid	0·12 ,,

These results also show that sodium biurate is more soluble in serum the alkalinity of which has been reduced by the addition of tartaric acid than it is in unaltered serum. I think that the view that uric acid is deposited in the liver, spleen, joints, and fibrous tissues owing to diminished alkalinity of the blood should be abandoned. It is based on an error—viz., that the deposit is uric acid, whereas it is sodium biurate. The results of the experiments that I have just described indicate that diminution of the alkalinity of the medium does not promote the deposition of sodium biurate. The other view, that increased alkalinity of the blood dissolves and sweeps out the accumulations of uric acid from the various organs and tissues, should also, in my opinion, be abandoned. It is based on the same error—viz., that the deposit is uric acid, whereas it is sodium biurater. That this body is not more soluble in highly alkaline fluids has been proved by the experiments of Sir William Roberts,[12] and is confirmed by the experiments that I have just described.

Certain drugs reputed to facilitate the deposition of uric acid.—Another erroneous idea, in my opinion, is that uric acid may be precipitated from the blood in the form of insoluble urates by certain metallic salts; these insoluble urates are supposed to be deposited in various tissues or organs, and yet in some mysterious manner to be subsequently re-dissolved when the alkalinity of the blood rises. There is absolutely no experimental proof to support such statements. Dr. Haig is, I believe, the chief apostle of these doctrines. As an instance of their erroneous nature I will briefly refer to Dr. Haig's[13] statement that "calomel clears uric acid out of the blood and retains it in the body by forming an insoluble urate of mercury." This statement is based on the fact that solutions of urates give with *soluble* salts of mercury a precipitate of urate of mercury. But how can an insoluble compound like calomel act in such a manner? It might be assumed that the calomel first forms in the system a soluble salt of mercury. If such were the case, then every time we give a full dose of calomel we should kill the patient by acute mercurial poisoning. Moreover the error of Dr. Haig's deduction is illustrated by observing the amount of uric acid supposed to be converted into urate of mercury. He mentions only one experiment in which half a grain of calomel is supposed to precipitate and retain in the system as urate of mercury 1·4 grains of uric acid. Now, even allowing that all the mercury in the half-grain of calomel is capable of forming urate of mercury, then it could only combine with one-fourth of the 1·4 grains of uric acid supposed to be precipitated by its means. Yet from this one assumed retention of uric acid by calomel Dr. Haig[14] remarks: "Mercury diminishes the excretion of uric acid in the urine, clears it out of the blood and retains it in the body, because it forms with it an insoluble compound, and it is therefore a single instance of my law of solubilities."

Influence of certain articles of diet on the precipitation of sodium biurate.—It is well known that the excessive consumption of rich nitrogenous food, combined with excesses in wine and malt liquors, both induce and excite gout. The comparative immunity of females and young people from gout is mainly explained by the absence of such determining causes of the gouty attack, combined with, in the case of young people, the absence of predisposing causes, and also the fact that the secreting functions are in full activity. The subjects of gout are generally persons who live well and consume a large amount of animal food. Dr. Budd, speaking from a long and extensive professional connexion with a large rural district, states that he never knew an instance of gout occurring among agricultural labourers. The generally accepted view that a highly nitrogenised animal diet necessarily produces an excessive amount of uric acid is disproved by the experiments, previously referred to, of Bleibtreu and of Hirschfeld. These experiments show that there is an increased elimination of urea to compensate for an excessive intake of nitrogenous food, and that the amount of uric acid remains practically undiminished. Judging by the results of the experiments which I have undertaken and previously described, it is highly improbable that any diminution in the alkalinity of the blood which might be produced by the consumption of an excessive amount of animal food could in any way affect its solvent powers for uric acid or accelerate the precipitation of sodium

[12] Croonian Lectures on Uric Acid Gravel and Gout, THE LANCET, June 18th and 25th, 1892.
[13] Uric Acid as a Factor in the Causation of Disease, 1896.
[14] Loc. cit., p. 63.

biurate. My own view is that, as regards the production of uric acid from proteid matter, it is of little importance whether the proteid is of animal or vegetable origin; the same harm may result from an excessive consumption of either form of proteid. But although animal and vegetable proteids may react alike with regard to the production of uric acid, it is quite possible that the different saline constituents of animal and vegetable foods might very materially affect the solubility of sodium biurate and therefore influence its precipitation. As I have been unable to find any record of experimental work bearing on this matter, I thought it advisable to ascertain if the saline substances contained in different articles of diet appreciably affected the solvency of sodium biurate at the temperature of the human body, as obviously the subject might have both a pathological and therapeutical bearing. The following experiments were therefore carried out.

Experiments showing the influence of the mineral constituents of meat, milk, and vegetables respectively on the solubility of sodium biurate at 100° F.—A series of experiments were undertaken, operating upon the ash respectively of lean beef, milk, and mixed vegetables (potatoes, spinach, and French beans). The experiments were carried out in the following manner, which is similar to the method adopted by Sir William Roberts in determining the influence of various therapeutical salts on the solubility of sodium biurate. The contents of a number of bottles each containing 100 c.c. of distilled water were mixed with known quantities of the different ashes and placed in the warm chamber until they were at a temperature of 100° F., when an excess of sodium biurate was added to each. The bottles were kept at 100° F. for five hours, during which period they were frequently agitated. At the end of that time the contents of the bottles were filtered and re-filtered through double filters until perfectly clear filtrates were obtained. The amount of uric acid in each of the filtrates was then estimated by adding an excess of strong sulphuric acid and titrating with the standard potassium permanganate solution: the quantity of uric acid found was subsequently calculated into terms of sodium biurate. The results thus obtained are shown in the following tables. The solubility of sodium biurate in distilled water is placed at the head of each table for comparison.

TABLE XI.—*Showing the Influence of the Mineral Constituents of Meat (lean beef) on the Solubility of Sodium Biurate at 100° F.*

Solvent.	Sodium biurate dissolved.
Water	1·10 per 1000.
Water containing:—	
1·0 per cent. of meat ash	0·93 ,,
0·5 ,, ,, ...	0·76 ,,
0·2 ,, ,, ...	0·56 ,,
0·1 ,, ,, ...	0·32 ,,
0·05 ,, ,, ...	0·15 ,,
0·02 ,, ,, ...	0·11 ,,
0·01 ,, ,, ...	0·85 ,,

From the above table it is seen that the mineral constituents of meat in all proportions between 1·0 and 0·01 per cent. diminish the solvency of sodium biurate. The effect is most marked when the proportions are between 0·1 and 0·02 per cent., which are proportions that may certainly be present in the blood after eating a few ounces of meat. It is therefore quite possible that the well-known influence of excessive meat eating on the hastening or maturing of an attack of gout may, in part at least, be due to the action of the mineral constituents of the meat.

From Table XII. it is seen that the mineral constituents of milk in all proportions diminish the solvency of sodium biurate. The effect is most marked when 0·1 per cent. of milk ash is present. It is extremely unlikely that such a proportion could be present in the blood unless a person were exclusively fed for some time on milk. To introduce 0·1 per cent. of the mineral constituents of milk into the blood would require that all the mineral constituents of about twenty-two ounces of milk should be introduced at one moment into the blood of an adult of average weight. These experiments therefore seem to indicate that the mineral constituents of milk can exercise no appreciable influence in hastening or maturing an attack of gout.

TABLE XII.—*Showing the Influence of the Mineral Constituents of Milk on the Solubility of Sodium Biurate at 100° F.*

Solvent.	Sodium biurate dissolved.
Water	1·10 per 1000
Water containing:—	
1·0 per cent. of milk ash	0·62 ,,
0·5 ,, ,, ...	0·58 ,,
0·2 ,, ,, ...	0·49 ,,
0·1 ,, ,, ...	0·44 ,,
0·05 ,, ,, ...	0·72 ,,
0·02 ,, ,, ...	0·90 ,,
0·01 ,, ,, ...	0·94 ,,

From Table XIII. it is seen that the mineral constituents of vegetables in quantities of 0·1 per cent. and above very appreciably increase the solvency of sodium biurate. In quantities below 0·1 per cent the solutions exercise the same solvent power on the biurate as distilled water.

TABLE XIII.—*Showing the Influence of the Mineral Constituents of Vegetables (potatoes, spinach, and beans) on the Solubility of Sodium Biurate at 100° F.*

Solvent.	Sodium biurate dissolved.
Water	1·10 per 1000.
Water containing:—	
1·0 per cent. of vegetable ash	2·15 ,,
0·5 ,, ,, ...	1·70 ,,
0·2 ,, ,, ...	1·35 ,,
0·1 ,, ,, ...	1·15 ,,
0·05 ,, ,, ...	1·10 ,,
0·02 ,, ,, ...	1·10 ,,
0·01 ,, ,, ...	1·10 ,,

These experiments indicate that the mineral constituents of vegetables, if taken in sufficient quantities, would delay the advent of an attack of gout by increasing the solvency of sodium biurate.

I next endeavoured to ascertain whether the mineral constituents of milk, meat, and vegetables possessed any inhibitory powers over the decomposition of sodium quadriurate; and, if so, what were their comparative powers. It has been demonstrated by Dr. Bence Jones and by Sir William Roberts that the quadriurates, which consist of a molecular combination of a biurate with uric acid, are resolved by the action of water into moieties—the biurate moiety, which is dissolved by the water, and the uric acid moiety which is precipitated in the form of ovoid crystals. My object was to ascertain whether this change was delayed by the presence in the water of small quantities of the mineral constituents of milk, meat, and vegetables respectively; and, if so, what the relative inhibitory powers of these constituents were. In connection with this investigation some very remarkable results were obtained. The method I employed was that originally used by Sir William Roberts. Some pure sodium quadriurate was prepared by the method described by him. A very small quantity was placed on a glass slide and stirred up with a drop of water. A cover slip was applied, and the result watched under the microscope. The time was noted at which crystals of uric acid began to make their appearance. Fresh quantities of quadriurate were then treated in a similar manner with 0·1 per cent. solutions of the mineral constituents of milk, meat, and vegetable ash respectively, and the different times at which crystals of uric acid commenced to form were noted. These were compared with the time required by distilled water to start the decomposition, which was taken as the standard of comparison. It was found that when the quadriurate was treated with distilled water crystals of uric acid commenced to form at the end of half a minute, when treated with a 0·1 per cent. solution of milk ash in distilled water at the end of half a minute, with a 0·1 per cent. solution of meat (lean beef) ash at the end of one minute, and with a 0·1 per cent. solution of mixed vegetable (potato, spinach, and beans)

ash at the end of two hours. Taking, for purposes of comparison, the time occupied by distilled water to start the decomposition as unity, the comparative influences exerted on the decomposition of the quadriurate by 0·1 per cent. solutions of the mineral constituents of milk, meat, and vegetables respectively are shown in the following table.

TABLE XIV.—*Showing the Comparative Inhibitory Powers on the Decomposition of Sodium Quadriurate possessed by Distilled Water and by 0·1 per cent. Solutions of the Mineral Constituents of Milk, Meat, and Vegetables respectively.*

Medium.	Comparative inhibitory power.
Distilled water	1
0·1 per cent. solution of milk ash	1
0·1 per cent. solution of meat ash	2
0·1 per cent. solution of vegetable ash	240

These results show that a 0·1 per cent. solution of milk ash acts precisely as does distilled water on the decomposition of the quadriurate; that a 0·1 per cent. solution of meat ash delays the decomposition of the quadriurate twice as long as distilled water, but still only for a very brief period; and that a 0·1 per cent. solution of vegetable ash delays the decomposition of the quadriurate 240 times as long as distilled water, and 120 times as long as does the meat ash solution. It must be borne in mind that the action of distilled water in causing decomposition of the quadriurate is very rapid as compared with blood serum, as the latter takes some hours to effect decomposition. It is highly probable that the addition of a small proportion of the mineral constituents of vegetables to blood serum would delay decomposition of the quadriurate for a very considerable period of time. I propose to further investigate this matter and to endeavour to ascertain to which of the saline constituents of vegetables this remarkable inhibitory power belongs. The investigation appears to be a promising one, but time has not allowed me to prosecute it further at present. The net results of these experiments and of those previously described indicate that the mineral constituents of meat only delay for a brief period the decomposition of the quadriurate, and when it is once decomposed they hasten the precipitation of the biurate. On the other hand, the results indicate that the mineral constituents of vegetables delay for a remarkably long period the decomposition of the quadriurate, and then subsequently retard the precipitation of the biurate by increasing its solvency. I do not wish to attribute the different effects of animal and vegetable diets on gouty subjects to the saline constituents alone, but it is, I think, to the different mineral constituents of animal and vegetable foods and to the different effects they have on the quadriurates and biurates that we must look for at least a partial explanation—perhaps a main one—of the known facts that an excessive diet of the one tends to produce gout and of the other tends to retard it.

Influence of alcoholic drinks on the gouty process.—It is well known that certain alcoholic drinks injuriously affect the gouty process, whilst others exert a less injurious influence. Alcoholic drinks which have been obtained by fermentation, but which have not been submitted to distillation, such as wines and beers, appear to exercise a more harmful influence than if the same amount of alcohol be consumed in the form of one of the distilled spirits, such as whisky, brandy, &c. Sir Alfred Garrod considers that the reason for the prevalence of gout in the South of England and its rarity in Scotland is chiefly due to the different beverages drunk in the two countries. Distilled spirits contain little or no acid, whilst wines and beers are distinctly acid, and to the acids contained in these drinks many physicians have attributed, and still do attribute, their gout-inducing properties. The acids present are tartaric, succinic, malic, acetic, formic, propionic, butyric, and œnanthic. The acidity of wines is mainly due to tartaric, malic, and succinic acids. The amount of free acid in sound wine, reckoned as tartaric acid, varies between 0·3 and 0·7 per cent. I found the acidity of some 1847 port, reckoned as tartaric acid, to be 0·6 per cent. Cider owes its acidity mainly to malic acid. Its total acidity is usually 0·1 per cent. If we arrange the various wines in (*a*) their order of acidity, and (*b*) the order of their gout inducing power, we find that the most acid wines are not those which most predispose to gout. The arrangement of wines and beers in the order of acidity, beginning with the most acid, is that given by Dr. Bence Jones, while the arrangement in the order of their gout-inducing power is that given by Sir Alfred Garrod.

TABLE XV.—*Wines and Beers arranged in order of Acidity and Gout-inducing Power.*

Acidity (beginning with the most acid).	Gout-inducing power (beginning with the most powerful).
Moselle.	Port.
Rhine wines.	Sherry.
Burgundy.	Other stronger wines.
Madeira.	Champagne.
Claret.	Stout and porter.
Champagne.	Strong ales.
Port.	Claret.
Sherry.	Hock.
Malt liquors.	Moselle.
	Weaker kinds of ales.

Claret, hock, moselle, and the weaker kinds of ales have comparatively little gout-inducing power.

Sir Alfred Garrod considers that acidity of alcoholic liquors cannot have much influence in determining an attack of gout, as port, sherry, and malt liquors, which are the most powerful predisposing agents are amongst the least acid; whilst the more acid wines, such as clarets, are comparatively harmless in this respect. This opinion is entirely borne out by the experiments I have described in this lecture, which show that a diminution of the alkalinity of blood serum does not hasten the conversion of sodium quadriurate into biurate, does not diminish the solubility of sodium biurate, and therefore cannot promote deposition of sodium biurate, and so be a determining cause of an attack of gout. The question is, To what constituent or constituents of wines and beers are their gout-inducing properties due? They are not due to the alcohol alone; for in countries such as Scotland, Norway, Sweden, and Poland, where distilled spirits are, or were, freely consumed, gout is almost unknown. Moreover, several experiments that I have made indicate that alcohol, in such quantities as it is ever likely to be present in the blood, has no effect either upon the conversion of sodium quadriurate into biurate or on the solubility of the latter. The gout-inducing properties are most probably not due to the acids of the wines and beers, for the reasons which I have already given. They are also most probably not due to the sugar. The late Dr. George Harley experimentally investigated the subject and stated that the popular notion as to the pernicious effects of sugar in cases of gout is open to grave criticism, seeing that not only can no reliable facts be adduced in favour of the statement, but no reliable authority for the assertion can be cited even by its believers. I have myself found experimentally that sugar has no appreciable effect either on the decomposition of sodium quadriurate or on the solubility of sodium biurate. The gout-inducing properties are certainly not directly due to the œnanthic ether and other ethereal salts of wines exerting any effect either on the rate of decomposition of the sodium quadriurate or on the solubility of the biurate. To demonstrate these points I have extracted from old port wines the ethereal salts to which the bouquet of the wines is due, and have experimented with these ethereal compounds on the quadriurates and biurates. Using quantities far in excess of those likely to be present in the blood after the moderate, or even immoderate, consumption of such wine, I find that none of these volatile constituents exercise the slightest effect either in hastening the decomposition of sodium quadriurate, or in diminishing the solubility or hastening the precipitation of sodium biurate. As to the *modus operandi* of certain wines, such as port, &c., in hastening an attack of gout, I am not at present prepared with an explanation, as I have not yet completed the experiments I am conducting with the view of endeavouring to throw some light on the subject. I, however, incline to the opinion that the influence of wines on the development of gout is in great part due to the effect they have on the metabolism of the liver, and the consequent increased amount of glycocine that passes on to the kidneys. At the same time it must be remembered that those

accustomed to drink wine are also able to indulge in other luxuries of the table which greatly favour the development of gout.

CONCLUSIONS.

The main points and conclusions arrived at in these lectures are as follows:—1. Uric acid is not normally present in the blood of man and other mammals, nor in the blood of birds. 2. Uric acid is normally produced only in the kidneys. 3. Uric acid is normally formed from urea, probably by conjugation of that substance with glycocine in the kidneys. 4. Uric acid is present in the blood in gout as the soluble sodium quadriurate. In its soluble form it is not a toxic agent. It deposits from the blood as sodium biurate, which acts passively and physically as a foreign body in the tissues or organs in which it is deposited. 5. The presence of uric acid in the blood in gout is due to its deficient excretion by the kidneys and to the subsequent absorption of the non-excreted portion into the blood from those organs. 6. Gout is probably always preceded by some affection of the kidneys, functional or organic, which interferes with the proper excretion of uric acid. The probable seat of the kidney affection giving rise to gout is in the epithelium of the convoluted tubes. 7. In certain blood diseases and disorders accompanied by leucocytosis uric acid is formed within the system from nuclein. Under such circumstances it passes at once into the blood and is rapidly eliminated by the kidneys. 8 The solubility of uric acid in the blood is not affected by a diminished alkalinity of the blood produced by the addition of organic acids. 9. The deposition of sodium biurate is not accelerated by a diminution of the alkalinity of the blood. 10. An increased alkalinity of the blood does not increase the solubility of deposits of sodium biurate. 11. The saline constituents of vegetables exercise a remarkable inhibitory power over the decomposition of sodium quadriurate. 12. The solubility of sodium biurate in the blood is increased by the presence of the saline constituents of vegetables. 13. The solubility of sodium biurate in the blood is diminished by the presence of the saline constituents of meat. 14. The gout-inducing properties of certain wines are not due to their acidity. Probably they owe their gout-inducing action to the effect they exercise on the metabolism of the liver.

NOTE ON LACTOSURIA.

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A CASE of saccharine urine in connexion with lactation that has recently fallen under my observation has prompted these few remarks upon the subject. Mention has been for a long time made of the condition, and a considerable amount of literature is to be found regarding it. It is a matter which is quite devoid of any intrinsic importance, but at the same time may in certain instances give rise for a while to a considerable amount of mental disquietude.

In the case in question the patient was first seen by the country medical attendant of the family and was brought to me by the London medical attendant. Attention was in the first instance drawn to the state of the urine by an unusually frequent desire for micturition being experienced by the patient. She had been suffering for a little time from dyspeptic troubles, and through these was weaning her child which she had been nursing for a period of five months. She reduced the times of nursing to twice daily for a few days and then ceased altogether, without having recourse to artificial means for the removal of the milk. The breasts were hard and lumpy and a little tender, but showed nothing more. It was at this period that the urine was examined and found to be of specific gravity 1040 and to give a strong reaction of sugar, the quantity indicated by the copper test being eight grains per fluid ounce (19 per 1000). Hopes were entertained when the discovery of the presence of sugar was made that it might be due to a re-absorption of milk sugar, but anxiety was created on account of the family history of diabetes in the mother. When I saw the patient, three days after the sugar had been recognised, she had been placed on a restricted diet, with the administration of codeina. A specimen of the urine passed on going to bed on the previous night was of specific gravity 1036. It gave an indication of containing 6·75 per 1000 of sugar reckoned as glucose. The urine passed on rising in the morning was of specific gravity 1034. The figures for sugar stood at 5·26 per 1000. Both specimens had thrown down a copious deposit of urates, and it had been noticed that the amount of urine passed was considerably below the normal. I suggested that the state of the urine should be watched with a trial of a gradually advancing liberty of diet if circumstances should be found to permit. I subsequently learnt that the sugar soon disappeared, and when I saw the patient two months later she appeared to be in good health, was taking ordinary food, and passing urine free from sugar. In order to subject her condition to a thorough test she was desired to partake to a fuller extent than ordinarily of starch and sugar-containing articles of food. A fortnight later the urine was again found to be free from sugar.

The high specific gravity of the urine in this case when the sugar was first recognised contributed to excite alarm. It arose, as not unfrequently happens with ladies, from undue concentration dependent upon the ingestion of an insufficient quantity of liquid to permit of the secretion presenting its ordinary state.

With the advance of knowledge that has latterly taken place we have now at our disposal the means of readily differentiating lactosuria from true glycosuria. In former times it was different, and the sugar of lactosuria was assumed to be the same as that met with in diabetes. Hofmeister[1] in 1877 conducted an inquiry into the nature of the sugar present, and found that in the saccharine urine associated with the puerperal state the sugar presented the characters of lactose instead of those of glucose; and it is now admitted that in the form of saccharine urine under consideration lactose, and not glucose, is present. It would seem that a slight amount of lactosuria is of very common occurrence, but it is only where the secretion of milk is profuse enough to lead to an undue accumulation in the gland, or where from any cause undue retention occurs, that marked lactosuria is met with. According to the observations undertaken by Ney[2] in the Midwifery Clinic at Basle, in 152 cases where attention was given to the state of the urine after childbirth a reaction with the sugar tests was obtained in 77 per cent. With a natural progress after childbirth Ney argues that the occurrence of a saccharine reaction may be taken as an indication of the possession of good nursing capacity on the part of the mother. It shows that milk is secreted in such abundance as to lead to a re-absorption of some of its sugar.

The presence of sugar other than glucose was determined in the case under consideration by means of its cupric oxide reducing power taken before and after boiling with sulphuric acid and also by treatment with phenyl-hydrazine. Boiling with sulphuric acid, associated with the application of the copper test, affords a most useful means of determining the kind of carbohydrate that has to be dealt with. I have used the procedure very largely in my physiological researches, and it has proved of the highest value. I have applied it to the urine of diabetes in a large number of instances, and only upon exceptional occasions have I found that it has done otherwise than indicate the presence of glucose. In the case before us the cupric oxide reducing power stood much below that of glucose. As a matter of fact the figures obtained were below the figures ordinarily taken to represent the cupric oxide reducing power of lactose. The osazone crystals obtained on treatment with phenyl-hydrazine did not agree with those of glucosazone, but, on the other hand, corresponded with those yielded by a low cupric oxide reducing sugar like lactose.

The elimination of lactose under the circumstances in which it is found has an interest of another nature besides that belonging to the clinical aspect of the question. It has a bearing of fundamental importance in relation to the physiology of the carbohydrates, touching as it does the consideration of their mode of application within the animal system. Under the doctrine that implies a functional transit of sugar through the circulation an insuperable difficulty is presented. All evidence goes to show that whenever sugar, no matter of what kind, reaches the general circulation it becomes revealed in the urine. For sugar to be kept out of the urine it must as a preliminary condition be kept out of the general circulation, and this is effected with the carbohydrate of alimentation by its being disposed of before the opportunity is afforded of its reaching the systemic

[1] Zeitschrift für Physiologische Chemie, Band i., p. 101.
[2] Archiv für Gynäkologie, Band xxxv., p. 239.

vessels. It has always been a puzzling matter under the old view that sugar supposed to reach the general circulation through the portal system from the alimentary canal should readily disappear, whilst after direct introduction by subcutaneous or intravenous injection it should remain susceptible of recognition and become discharged with the urine. With reference to milk sugar in relation to this point, von Noorden[3] writes: "We have here in the case of milk sugar to do with a substance which is in an eminent degree a physiological nutrient material, a substance which is taken in 'milk-cures' to the amount of from 100 to 150 grammes a day, and which can be ingested by most healthy individuals in single doses of 100 grammes and be rapidly absorbed without a trace escaping decomposition and appearing in the urine. Why, then, should a nursing woman excrete in the urine the certainly very small amount of sugar which she has elaborated in her own mammary glands and which has been thence taken up in the blood? A number of researches which I have made with a view to a solution of this problem have led me to the hypothesis that in the puerperal state the capacity of the tissues for breaking up milk sugar is diminished. We have here an instance of adaptation to an end, in that the cells of the mother refuse a material which is pre-eminently suited to the nutritive wants of the nursling."

The fact is, the milk sugar which is received into the alimentary canal does not reach the general circulation, as hitherto supposed, but becomes assimilated or disposed of instead. Experiment shows that if it did reach the general circulation the fact would be indicated by its passage into the urine. I have found that the injection of lactose only to the extent of one gramme per kilo of body weight, either subcutaneously or intravenously, gives rise to an enormous appearance of lactose in the urine. In absorption from the mammary gland the position may be looked upon as identical with that in absorption from the subcutaneous tissue, and when circumstances exist to lead to its occurrence the passage of lactose into the urine occurs. Lactose, then, cannot be conveyed as such in the blood to the mammary gland for separation by secretion any more than, as I contend, sugar can be conveyed to the tissues for destruction. In either case the urine would infallibly afford indication of the transit. Under the glucoside constitution of proteid matter set forth by me in my "Physiology of the Carbohydrates" carbohydrate matter can be transported without being in a position to run off with the urine, and with lactose taking origin as a cleavage product in the mammary gland all difficulty is overcome. It is quite obvious that if lactose reached the mammary gland, as such, for secretion it would similarly reach the kidney for elimination. By analogy the position of lactose throws light upon the broad question of the physiology of the carbohydrates in the animal system.

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ILLUSTRATIVE CASES OF APHASIA.

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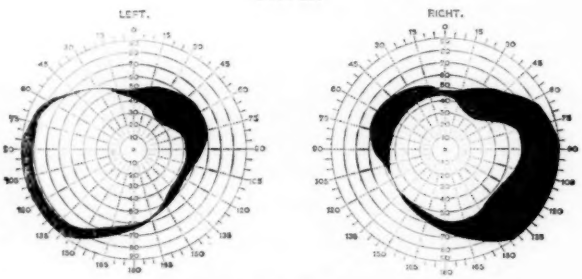
(*Continued from p. 1022.*)

CASE 5. *Word-blindness in a patient who had never learned to write; constriction of the fields of vision chiefly towards the right; no obvious word-deafness; cardiac and renal disease; death; extensive old softening in the white matter of the left occipital lobe and of the left angular gyrus, and the back part of the first temporo-sphenoidal convolution.*—This patient was seen at the out-patient department of the Edinburgh Royal Infirmary on Nov. 7th, 1888, and was carefully examined at her own home on several subsequent occasions. I have, unfortunately, mislaid the detailed notes which were made except at the time of her visit to the infirmary, but my recollection of the leading facts is quite definite. The chief point of the case is that, although the posterior part of the first left temporo-sphenoidal convolution was extensively destroyed by an old softening, there was no obvious word-deafness. I should, however, here state that I had not seen the patient for several months before her death. It is therefore possible that the cerebral softening was much more extensive at the time of death than at the date of my last examination. I merely suggest this possibility, for there was nothing in the condition of the brain after death to lead me to suppose that this was the case. The word-blindness is explained by the lesion of the angular gyrus and adjacent white matter. The lesion must have involved, at all events in some degree, the optic radiations of Gratiolet. One would therefore have expected more complete right-sided lateral homonymous hemianopsia than the perimeter chart shows (see Fig. 15); but, as I have explained in the text, there was great difficulty (owing to the inability of the patient to concentrate and fix accurately) in mapping out the visual fields. The hemianopsia was probably more complete than the perimeter chart shows. Possibly the softening had become more extensive after the perimeter measurements were made. It is unfortunate that the patient had never learned to write, but there can be little doubt that if she had been able to write there would have been agraphia, for the visual speech centre (the angular gyrus) was involved in the lesion (see Fig. 16). The notes are as follows:—"The patient was a woman, aged fifty-six years; she was seen at the out-patient department of the Edinburgh Royal Infirmary on Nov. 7th, 1888, complaining of loss of memory, inability to read, dimness of vision, and dropsy. With regard to her previous history, the patient and her friend who brought her to the hospital stated that she had suffered from her heart for the past eight years, and that she had been much worse and troubled with dropsy, cough, and shortness of breath for the past six months. A fortnight previously she suddenly lost the power of speech. This continued for some hours. She then gradually regained the power of speaking and had been able to speak well since. Since the attack her memory had been much impaired and she had been quite unable to read. She was never a good reader, and had never learned to write. At the present time the patient is suffering from general dropsy, the face as well as the feet being swollen. She is very short of breath. The heart is much enlarged and there is a well-marked mitral lesion. The urine is albuminous. As to the speech faculties, the patient appears to understand everything that is said to her and has been able to do so since the attack commenced. There was therefore no indication of any lesion of the auditory speech centre. The patient answers questions and speaks quite well. No marked defect of the motor vocal speech apparatus was detected on any of the occasions on which she was examined, but the friend with whom she lived subsequently told me that she not unfrequently made use of wrong words (paraphasia) and forgot the meanings of others. The patient is quite unable to read either letters or words (complete word-blindness). There is well-marked right-sided homonymous hemianopsia to the rough test. The fields of vision were subsequently mapped out (on Jan. 17th, 1889) by means of the perimeter (see Fig. 15). The chart shows a partial condition of right-sided homonymous lateral

FIG. 15.



Perimeter chart of the fields of vision in Case 5, taken on Jan. 17th, 1889. The patient died on May 1st, 1890.

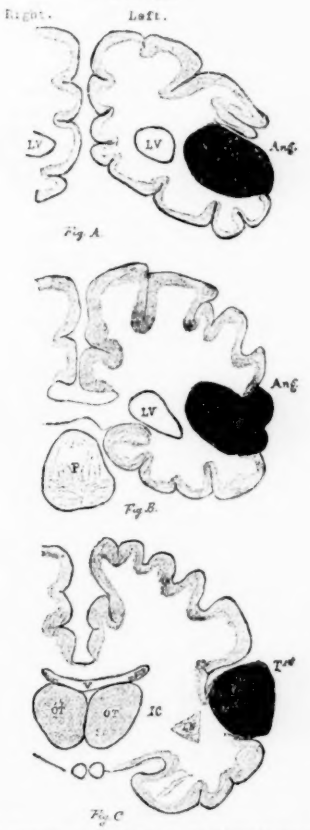
[3] Twentieth Century Practice of Medicine, vol. ii., 1895, New York, p. 45.

hemianopsia, with some constriction of the left halves of the fields. The hemianopsia was probably more extensive than the chart shows, for except when the test object was quite at the outer edge of the fields the patient's answers were indefinite. She had never learned to write, consequently the presence or absence of agraphia could not be determined." On one of the subsequent examinations (the notes of which I have mislaid) the patient's friend told me that the patient understood everything which was said to her, but she did not think she understood things which were read to her. This statement seems to indicate a certain degree of word-deafness; but I could never satisfy myself that any obvious word-deafness was present. She also stated that the patient used to read her Bible night and morning, but she (her friend) did not think that the patient understood what she read. On the several different occasions on which I examined her I invariably found that she could understand spoken language and could herself make use of language (speech). But I never got her to read any question which I put to her in writing. She could read a few short printed words, such as "dog," "cat," and "hat," but made frequent mistakes in reading even these short words and in reading the alphabet. She was also very bad at reading figures. For some months before her death she was in a restless condition; her friend, who lived next door to her, said that she was "queer in the head." On May 1st, 1890, she was found drowned in the Water of Leith; she had wandered out of the house and apparently fallen into the stream.

Necropsy.—Dr. Harvey Littlejohn examined the body post mortem and kindly sent me the brain. The arteries at the base of the brain were atheromatous. An extensive area of old softening was present in the left hemisphere. It involved the white matter of the left occipital lobe, the left angular gyrus, and the back part of the first temporo-sphenoidal convolution. The exact position of the softening is shown in Fig. 16 (Sections A, B, and C), which were drawn from fresh sections of the brain. The kidneys and liver were cirrhotic. The heart was very large, the left ventricle much hypertrophied and dilated, the mitral valve considerably dilated, and the heart muscle degenerated.

CASE 6. *Marked temporary motor aphasia, word-blindness, and agraphia; optical aphasia; no word-deafness; the word "dog" written as "God," which was then read as "dog."*—This case is chiefly interesting from the facts that, while there were marked temporary motor aphasia, word-blindness, and agraphia, there was no obvious word-deafness, and that after the temporary effects of the primary lesion had passed off the patient wrote some words backwards—e.g., he wrote "God" for "dog," and after having written "God" for "dog" he read the word "God" as "dog." The notes are as follows:—The patient was a man, aged forty-two years. He was seen at the Edinburgh Royal Infirmary on Sept. 8th, 1890, suffering from motor aphasia, word-blindness, and agraphia. With regard to the previous history, he had been quite well until five days previously. On getting out of bed in the morning he felt sick, but did not vomit; he fell over three times in trying to get up. When his neighbours went into the room they found him quite sensible, but unable to speak. There was no headache and no giddiness. His condition was as follows. The patient seemed to understand everything that was said to him (the auditory speech centre did not appear to be affected). There was marked motor aphasia, almost the only words he could use being "yes" and "no." There was also marked word-blindness. When asked in writing, "Are you a fool?" he showed no sign of intelligence. When the sentence was read aloud to him he laughed and seemed much amused. There was also marked agraphia. He could not write his own name when told to do so. There was some right-sided hemianopsia. There was no obvious paralysis of the face. The right arm was much weaker than the left. The grasping power of the right hand as measured by the dynamometer was 85, and that of the left 116. In walking the right leg was dragged slightly. There was no cardiac lesion and no albuminuria. On Sept. 9th the patient's power of speaking was better and the motor power in the right arm was almost equal to that in the left. The dynamometer registered on the right 130, and on the left 135. On Sept. 10th the speech faculties were again carefully tested. The patient understood everything that was said to him. He spoke much better than on admission, but there was still a marked degree of motor vocal aphasia. Reading and writing were very markedly impaired—especially writing. He could not name a knife when it was shown to him. He read his own name correctly; but read "you" as "out" and made many similar mistakes in reading. He knew the figures "2" and "1." He could not read "42"; he said "41" was "5." He knew the individual figures "4" and "5" in "45," but he could not combine them. When asked to write

FIG. 16.



A series of transverse vertical sections through the brain, seen from the front, in Case 5 (word-blindness, but no obvious word-deafness) showing the exact position of the lesion (softening) in black. Fig. A represents the occipital lobe; Fig. B further forward at the level of the pons Varolii; and Fig. C further forward at the level of the optic thalami and corpora albicantea. The softening involves the angular gyrus (pli coubre) and first temporo-sphenoidal convolution.

"cat" he wrote "s a m a n." He could not write his own name. He wrote the letters "a" and "b" correctly when asked to do so. He could not write the letters "o" and "t." He said he was "forty-two years of age," but could not write it. He wrote "12" for "21." He could copy letters, figures, and words quite easily and correctly. On Sept. 13th he was very much better. He wrote his name and address quite distinctly. When asked to write "dog" he wrote "God," and when asked to read the word "God" which he had written read it as "dog." When told he was wrong, that he had written "God," he said, "Oh! yes, you have another way of writing it," and laughed. After an interval he was asked to read the word "God," and said, "That is very good, the name of God." On this day the patient discharged himself, and was not seen again.

CASE 7. *Case of word-blindness and agraphia; instead of reading individual letters as letters, the patient substituted a word commencing with the letter which he could not read—"George" for "G," "nearly" for "n," &c.*—The patient, a man aged fifty years, was seen on June 29th, 1893. With regard to the previous history, the patient, who suffered from free aortic disease, great enlargement of the heart, and

albuminuria, had had two cerebral attacks. The first occurred on June 15th, 1892. In this attack he became paralysed on the right side, but did not lose consciousness. Speech was not affected. The paralysis slowly improved, but still continued. The second attack occurred on April 17th, 1893. The day before the attack (April 16th) he complained of violent headache, inability to see to read, and giddiness. The next morning his wife noticed that he could not speak properly. The paralysis of the arm and leg was no worse after this attack. He had been unable to read since this attack, and only able to write very imperfectly. He looked well in the face and said he felt well. His appetite and digestion were good. His wife said that he was very restless, always wanting to be off somewhere. He himself said: "Oh, I get tired of one place; if I could only read it would not be so bad." He was much more irritable than he used to be. He walked with a slight limp. There was little or no paralysis in the right arm. The grasping power of the right hand as measured by the dynamometer was from 90 to 105, and that of the left from 85 to 90. With regard to his speech faculties, he seemed to understand everything that was said to him (the auditory speech centre was unaffected). There was no marked defect of vocal speech, but his wife said that every now and again he made use of a wrong word. For example, "I want a pint of 'matter,'" meaning "milk." "Church," "white," and "height" were great words of his; he was constantly bringing them in in wrong places. His wife said that he was all wrong about figures and names. He repeated anything he was asked to repeat correctly. He was almost completely word-blind. His wife said that he would not admit this himself. He made a point of "reading" the paper every morning, but she was sure he could not understand it. She had on several occasions noticed that he held it upside down. When tested he could not read the words "November," "Edinburgh," "thus," "house," "Edinburgh Hospital Reports"; but read the words "dog" and "hat" correctly. He was unable to read the individual letters; he said "a" was "m," "o" was "d," "h" was "10," and "p" was "d." When asked to read the individual letters he in many instances said a word beginning with that letter; for example, he said "n" was "nearly," "G" was "George," and "J" was "James." He could not read numbers. Asked to read "10," he said, "No, I don't know." There was marked agraphia. He could sign his own name; and when asked to write something spontaneously wrote, "I am getting better." He was unable to read this sentence after he had written it. He could not write "June, 1893," "Edinburgh, 1896," when asked to do so. He wrote "26" for "28." His wife said that he often did stupid things; for example, he would eat his egg with his fish-knife. Shortly after this report was written the patient died suddenly; a post-mortem examination was not allowed.

CASE 8. *Case in which right-sided hemiplegia, complete motor (vocal) aphasia, word-blindness, and agraphia (probably due to embolism of the left middle cerebral artery) were suddenly produced, but in which there was no word-deafness; slow and gradual recovery; condition of the patient fifteen years after the original accident; mirror writing, &c.*—The chief points of interest in this case are: 1. That after a severe cerebral lesion, the exact nature of which is not clear, there was complete motor aphasia, word-blindness, and agraphia, but (if the patient's statement is to be relied upon) no word-deafness. 2. That the motor vocal aphasia was only very slowly recovered from. 3. That when the patient was admitted to the infirmary, fifteen years after the original seizure, marked word-blindness, with great constriction of the fields of vision and almost complete agraphia, were still present. 4. That she was able to write her own name with the left hand in mirror writing with comparative ease; but that other words, which were written with much greater difficulty and effort, were written with the left hand in the ordinary direction (from left to right). 5. That she could read and write numbers and figures much better than letters and words. The notes of the case are as follows:—The patient, an unmarried woman aged thirty-one years, was admitted to the Royal Infirmary on April 4th, 1896, complaining of pains in the right leg and foot of two months' duration, and of old-standing right-sided hemiplegia. With regard to the previous history, the patient stated that she enjoyed excellent health until she was sixteen years of age. She then had a long illness, the exact nature of which is doubtful, but which she termed intermittent fever, and was confined to bed for seven months. During convalescence from this illness she suffered from severe frontal headache; it occurred daily and lasted for about an hour at a time. Some days after the headache commenced she suddenly became unconscious while sitting at the table getting tea; she stated that she remained unconscious for a long time (? several weeks). On recovering consciousness she found that the right side of the body was paralysed, the right side of the face, and the right arm and leg being affected, and that she was speechless. She was also unable to read, and of course unable to write. In addition to the motor paralysis there seems to have been right-sided hemianæsthesia. She stated positively that as soon as she regained consciousness she was able to understand what was said to her perfectly well. This is a very interesting and important fact. It seems to support the view that the auditory word-centre in the right hemisphere is in some persons sufficiently educated and active to carry on the function of understanding spoken language when the corresponding centre in the left hemisphere is destroyed; in other words, that compensation is more quickly and easily effected in the case of the auditory speech than the motor vocal and the visual speech centres. There can be no doubt that in this case there was a very extensive lesion on the left side of the brain. The sudden onset of the attack and the age of the patient at the time when the attack occurred (sixteen years) are strongly suggestive of embolic infarction rather than of cerebral hæmorrhage. It is difficult, too, to suppose that if the case had been one of hæmorrhage such extensive results—complete right-sided hemiplegia, motor vocal aphasia, and word-blindness—would have persisted for such a length of time. It must, however, be admitted that the long duration of the coma and the hemianæsthesia which appears to have been present were in favour of hæmorrhage or (leaving the hemianæsthesia out of account) of thrombosis rather than of embolism. Now, if the case was one of embolism or arterial thrombosis it seems certain that the blood-supply to the parts of the brain to which the middle cerebral artery is distributed must have been completely interrupted; and if this was so it is probable that the auditory speech centre was implicated as well as the visual speech centre and Broca's convolution. Although the patient stated that she could understand spoken language quite well, it did not, of course, follow that there was no defect in the action of the auditory speech centre. Déjerine, Mirallié, and others are of opinion that any severe lesion in the "zone of language"—which comprises the motor vocal speech centre (Broca's convolution), the auditory speech centre (posterior part of the first or upper temporo-sphenoidal convolution), and the visual speech centre (angular gyrus and supra-marginal convolutions), and which involves any one of these three great centres for language (say, the motor vocal speech centre)—produces some, and usually very obvious, defects in the action of the others (say, the auditory and visual speech centres). In some cases the derangement of function in the centre or centres which are not directly involved by the lesion is latent and only to be demonstrated by careful testing. It is quite possible, therefore, indeed probable, that if the faculty of auditory speech had been carefully tested in this patient at the time when she recovered from the acute attack some defect in her power of understanding spoken language would have been observed. But this does not in any way invalidate my argument—viz., that in some cases in which there is every reason to suppose that the auditory speech centre is the seat of a profound lesion, the faculty of understanding spoken speech is comparatively little affected. And if this proposition be granted, the only satisfactory explanation which I can see of the facts is that the auditory speech centre in the right hemisphere is in some degree functionally active and capable of carrying on the function of the left auditory speech centre which is destroyed. In my experience word-deafness in a complete form is less common than the other forms of aphasia. This is, I think, best explained by one or other of the following suppositions: (*a*) that the auditory speech centre is less vulnerable, so to speak, than the other speech centres—in other words, that its inosculatory circulation is more free and that complete destruction or softening of the auditory speech centre (the first, and perhaps also the second, temporo-sphenoidal convolutions), the result of embolic infarction, is consequently less frequent than complete destruction of the visual speech centre (angular gyrus) and the motor speech centre (Broca's convolution), though I am not aware that this has been

actually proved to be the case; or (*b*) that in some persons the corresponding auditory speech centre in the right hemisphere of the brain is functionally active in some degree. For the reasons given below this view is, I think, highly probable. In short, I am disposed to think that in some persons there are two more or less active (functionally educated) auditory speech centres for the reception of spoken languages—one in the left and the other in the right hemisphere (the first and perhaps also the second temporo-sphenoidal convolutions). It is difficult, I think, without adopting this supposition to explain the facts: (1) that complete word-deafness is, comparatively to the other great primary forms of aphasia (word-blindness and motor vocal aphasia), rare; (2) that recovery from word-deafness is usually much more rapid and more complete than recovery from motor aphasia or word-blindness;[1] and (3) that extensive lesions of the left temporo-sphenoidal lobe (such as softening due to embolic infarction, tumours, and abscesses) are occasionally, though probably very rarely, met with after death in cases in which there was no obvious or marked word-deafness during life.[2] Clinical and pathological observations undoubtedly show that in the great majority of persons the auditory word-centre in the left hemisphere is far more highly educated and active than the corresponding centre in the right hemisphere. Indeed, so much so is this the case that most authorities seem to think that the auditory speech centre in the left hemisphere is the only active auditory speech centre. In cases in which word-deafness persists in a marked degree (unrecovered from) for a considerable period of time before death and in which the left auditory speech centre is on post-mortem examination found to be destroyed it is obvious that the left auditory word-centre was the "driving" or active centre, and the right auditory speech centre was inactive and uneducated, or, to speak with absolute accuracy, insufficiently active and insufficiently educated to carry on the speech function which was destroyed; just as in the great majority of persons the left motor speech centre and the left visual speech centre are the "driving" or active centres. But for the reasons I have just stated there are, I think, some grounds for supposing that in some persons the auditory speech centre in the right (inactive) hemisphere is in some degree functionally active—in other words, somewhat more highly educated than the other speech centres (the visual and motor speech centres) in the right hemisphere. I am aware that, in supposing that the auditory speech centre in the right (usually inactive) hemisphere, so far as speech is concerned, is in some persons possessed of some active speech function, I differ from the usually accepted opinion—viz., that the speech centres are only active in one (the left) hemisphere. Thus Mirallié says—and his opinion represents the usually accepted opinion of the day—"le cerveau droit n'a rien à voir avec la fonction du langage."[3] With this opinion I cannot agree. Everyone admits that if Broca's convolution is destroyed in a young person the motor aphasia which results may be, and usually is, completely recovered from, and that this recovery is due to the fact that the opposite motor speech centre in the right hemisphere takes up and carries on the function of the left motor speech centre which is destroyed. Barlow's classical case completely proves this. Further, there is every reason to suppose that in young persons the same process of compensation may and does occur in the case of the sensory speech centres (auditory speech and visual speech centres). Again, it is certain that the same method of compensation, though it is far less easily established and much less perfect when established, occurs in the adult as well as in the child. Now, my argument is that this process of substitution and compensation is in many persons more easily established in the case of the auditory speech centre than in the case of the visual speech centre and the motor vocal speech centre.[4] This is only, I think, what we might expect on physiological grounds, since the auditory speech centre is first partially educated, and its action is, in most persons at all events, more automatic than the action of the visual speech centre, and possibly somewhat more automatic than the motor vocal speech centre, the action of which is to a large extent initiated, regulated, and governed by the auditory speech centre. And this supposition is, I think (for the reasons already advanced), confirmed by the effects which are produced by disease.

But to return to the details of the case. After recovering from the coma the patient remained speechless and unable to read and write for a very long time. The facial paralysis was recovered from in the course of a few weeks; some motor power was slowly and gradually regained in the right arm and leg. She stated that she was almost speechless for seven months and that the power of speech was then very slowly and gradually regained. It was only during the past two or three years—that is to say, it was not till twelve or thirteen years after the attack—that she had been able to speak with anything like facility. The power of reading was regained more slowly still, and since her illness she had not made any effort to write. Ever since the attack she had been more or less delicate and had had repeated attacks of bronchitis. Four years ago she suffered from congestion of the lungs. About five years ago there was some skin eruption on the forearms, apparently psoriasis. With regard to the family history, her father died from congestion of the lungs, chronic bronchitis, and ague; her mother from typhus fever; and a sister in childbirth. She had two brothers and four sisters alive and well, but one brother had had three attacks of rheumatic fever and another brother was for a long time troubled with rheumatism, while a sister was also much troubled with chronic rheumatism; in fact, the patient said that a large number of her near relatives had been rheumatic. She did not know if any of them had ever suffered from heart disease. The patient was well nourished and appeared to be in good health. She still walked with a slight limp, and the right arm and hand were still markedly paralysed. Both knee-jerks were exaggerated, the left even more so than the right. Ankle-clonus could also be elicited in the left leg. The pain in the right leg and foot of which she complained was apparently the result of muscular spasm or cramp; it was increased by walking and when pressure was made on the ball of the great toe. She also said that it was worse in damp and changeable weather. The grasping power of the hands, as measured by the dynamometer, was in the right 15, and in the left 50. There was no perceptible difference in the muscular power on the two sides of the face. The right arm and leg were smaller than the left. The detailed measurements were as follows: The right arm at the thickest part, 13¾ inches; the left arm at the thickest part, 12 inches; the right forearm at the thickest part, 9¼ inches; the left forearm at the thickest part, 9¾ inches; the right thigh at the thickest part, 16¼ inches; the left thigh at the thickest part, 17¼ inches; the right calf at the thickest part, 12 inches; and the left calf at the thickest part, 12¾ inches. The right hand was smaller and more delicate looking than the left; the fingers were slightly flexed, and the thumbs were slightly drawn into the palm. There was no perceptible difference in the tactile sensibility on the two sides of the body. The fields of vision were markedly constricted in each eye (see Fig. 17). As to the speech functions, the patient was mentally quite bright and alert and seemed to understand everything that was said to her. The only apparent defect in motor speech was a difficulty in pronouncing long words—"Constantinople" for example. She could sing a little; after the attack she lost the power of singing for a time, but it had gradually come back to her. Her reading was very defective. Before the onset of the hemiplegic attack she was a good reader and good writer. She said herself that now she could hardly read anything and that she could not spell at all. She read her own name, the words "dog" and "hat," and the individual letters of which they were composed; also the letters

[1] In my experience word-deafness is more easily recovered from than motor vocal aphasia, and motor vocal aphasia than word-blindness. The order of recovery, be it observed, is that in which the speech faculties are trained and developed.

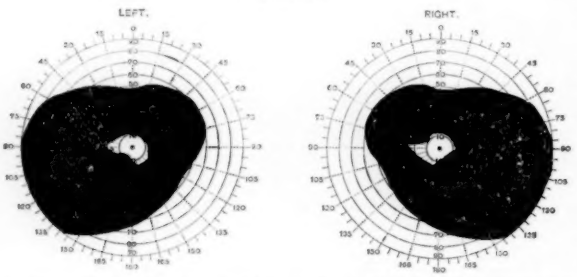
[2] Possibly the relative rapidity with which word-deafness is usually recovered from explains, in some measure at least, its apparent rarity; possibly word-deafness is more common than my own observation would lead me to suppose, the aphasic defect being, in some cases at least, recovered from before the patients come under observation. It must also be remembered that until quite recently the true nature of cases of marked word-deafness was often unrecognised. Such cases were not unfrequently, and they, perhaps, are still occasionally, thought to be cases of insanity, or of ordinary deafness (as distinct from word-deafness), or of motor aphasia.

[3] De l'Aphasie Sensorielle, p. 93.

[4] I am disposed to think that in some persons the visual and motor vocal speech centres in the right hemisphere may also be active in some slight degree, and that, in young persons at all events, when the active or driving centres in the left hemisphere are destroyed they (the visual and motor vocal speech centres in the right hemisphere) may become active in a high degree.

"e," "o," "m," "b," "s," "n," and "w" correctly. She could read numbers and combinations of numbers much better than letters and combinations of letters (words). Her power of spelling was very defective. Asked, "What is your name?" she gave it correctly. When asked, "How do you spell it?" she replied, "Cannot." When asked to spell her Christian name, she spelt it correctly. When asked to spell her surname, she replied, "Don't know." Asked what was the first letter she replied "M"; the second letter, she replied "Don't know." She continued to say "Don't know." She soon got tired with reading; she reads, she says, much better to herself than she can read aloud. She knew and named correctly a knife, key, watch, and a button-hook after some hesitation; she did not know a tuning-fork (apparently because she had never seen the object before), and said, "Oh! that is a doctor's thing"; in short, there did not appear to be any optical aphasia. She could copy letters

FIG. 17.



Perimeter chart of the fields of vision in Case 8, showing marked constriction of the peripheral portions of the fields in both eyes.

with either hand. She wrote her name with the right hand. When asked why she could not spell it she said sharply, "Well, because I did not know; other things I cannot spell; wrote it just out of my mind." She wrote the word "dog" as "doy," and said, "But mind, I'm no' donnert" (daft). She wrote "o" with the left hand, and "b" after looking at it, with the left hand as "a." On April 6th she read, "Are you very old?" and the numbers "10," "200," and "58" correctly. She named pieces of money (a halfpenny, a shilling, and a threepenny-piece) at once without any hesitation. When asked to write the word "cat" she wrote "c" and said, "You see, I have lost all my spelling. Well, I cannot make that." She could not write "God" two minutes after she had copied it. She wrote her own age (thirty-one) correctly. She wrote her names correctly with the left hand in mirror writing, also the word "cat" with the left hand in mirror writing; "54" in the usual direction with the left hand, and "37" and "hat" in the usual direction with the left hand. Asked to write down how she felt she said, "Oh! I cannot." Asked to write down the word "dog" with the left hand she said, "Oh! I could not; don't know how to spell." On April 21st she wrote her names in mirror writing with the left hand; and "God," "cat," and "dog" (doy) with the left hand in the ordinary direction. The power of writing was tested on several subsequent occasions, with the result that she invariably wrote her name with comparative ease (apparently automatically and without much effort) with either hand; but it was always written with the right hand in the usual direction (from left to right), and always written with the left hand in the reverse direction (in mirror writing), whereas other words which she had great difficulty in writing, and which were only written very slowly with much effort and thought, were almost invariably written with the left hand in the ordinary direction (from left to right), and with the exception of the word "cat," as stated above, never written in mirror writing.

(To be continued.)

BATH AND SOMERSET SOCIETY FOR THE PREVENTION OF CRUELTY TO ANIMALS.—At the annual meeting of this society, which was recently held in Bath, it was stated that legacies amounting to £315 had been received in 1896, but the expenditure had exceeded the income by £36.

BATHS AND GYMNASTICS IN ARTERIO-SCLEROSIS.

BY MEDICINALRAT J. GROEDEL, M.D.,
BAD-NAUHEIM.

FOR many years I have devoted great attention to the treatment of arterio-sclerosis, and on several occasions have published the results of my experience, which, however, may not have come to the knowledge of the majority of English physicians. For this reason, and because so much interest has been shown of late by medical circles in England in the balneological and gymnastic treatment of heart diseases I have felt induced to discuss the above subject in an English medical journal. I shall begin with the treatment by baths. The first question is, "May any person whatever with demonstrable arterio-sclerosis, or where such may with probability be assumed, be allowed to take baths?" The increased pressure of blood which is considered the usual consequence of treatment by Nauheim baths may at first sight seem to indicate that every patient with arterio-sclerosis should be excluded from a treatment by baths. A further increase of the high blood-pressure usually found in arterio-sclerosis[1] must not only surcharge the heart more than is already the case, but also create the danger of the bursting of a cerebral miliary aneurysm, so often present in cases of arterio-sclerosis. I have, however, by numerous observations been able to convince myself that baths can be prescribed for these patients in such a manner that the increase of blood-pressure does not take place, or only in a very slight degree. If the temperature be kept almost at the point of indifference, that is, about from 92° to 93° F., the primary acute increase of blood-pressure caused by the contraction of the cutaneous vessels, and most to be feared, will be very slight, and if there be carbonic acid in the bath at the same time will quickly disappear. If the skin of the patient be cooled somewhat by moistening the parts particularly sensitive to cold before entering the bath, the avoidance of that primary increase of blood-pressure, or, indeed, any shock whatever, will be the more certain. A similarly good effect is produced when the patient is only allowed to take half-baths and the exposed parts of the body are wrapped up so as to prevent cooling. In most cases the amount of water can be increased little by little at each bath until a full bath is at length attained, but even then it is advisable to let the patient only submerge his body by degrees, and placing cold bandages on the bather's head is often indicated. By proceeding cautiously in this manner I have never had an unfortunate case in the course of a practice of twenty-two years in Nauheim. Under what conditions can a course of baths be indicated or beneficial in cases of arterio-sclerosis? It may be desirable to give baths for some other disease when arterio-sclerosis is present. It is mostly a question of diseases based on the same etiological principle as arterio-sclerosis itself, or such as usually lead to it. By combating these we can at the same time retard the progress of the sclerotic process in the vessels. I will only mention gout, chronic articular and muscular rheumatism, arthritis deformans, and neurasthenia.

That it is possible completely to remove existing sclerotic degeneration by any means I do not believe; we are, however, undoubtedly able to retard (aufzuhalten) the deleterious process. The first thing is, of course, the removal of all conditions disposing to arterio-sclerosis. One of these, for which treatment by baths is especially serviceable, I have already mentioned. Of the greatest importance is a proper diet and general regimen, to which the patient must be trained, and this is easier and more successful in a watering-place than at home. But even a direct influence of the baths on the sclerotic process, and with it a limitation of the disease, is in my opinion possible. When I consider all the

[1] Basch considers that every permanent super-normal blood-pressure (more than 150 mm. Hg at the radial artery) is to be considered a sign of arterio-sclerosis, even when there are no other symptoms. He calls this "latent arterio-sclerosis."

theories that have been propounded regarding the origin of arterio-sclerosis, I come to the conclusion that a disturbance in the nutrition of the walls of the vessels must play an important part, and that functional troubles of the vascular innervation are perhaps the primary cause. The acknowledged tonic effect of the baths on the nervous system may, of course, be taken into especial account for the vaso-motor part of the process. Disordered nutrition in certain organs can no doubt be entirely removed, or at least improved, by means of baths; why not also disordered nutrition of the vascular system?

Of particular importance is a course of baths in cases of arterio-sclerosis, when owing to this change the heart is no longer able to satisfy the increased claim on its functional capacity. So much has been written of late years about the tonic effect of carbonic acid thermal baths on the heart that I need not enter further into this subject. I shall content myself with stating that with disordered circulation also, when this is caused by arterio-sclerosis, the manifold consequences of cardiac insufficiency, if recent, sometimes disappear, and if more advanced can often be decidedly improved. We find not infrequently that in the course of a "kur" the pulse improves considerably as regards frequency, quality, and rhythm. On examination the heart also shows a corresponding change for the better compared with its former state. Yet there are cases enough in which the success is only a slight one, especially those in which the arterio-sclerosis has attacked the greater vessels in a more extensive manner or has even led to a dilatation of the aorta and aortic regurgitation; then, again, little success is attained in cases in which there is already an advanced degeneration of the myocardium. In such cases we may be satisfied even with a little success. Baths are contra-indicated for arterio-sclerosis when there is such a high degree of insufficiency of the cardiac muscle that digitalis and the other usual drugs remain without any effect. For patients with remains of apoplexy the following rules may be laid down. If apoplectic fits have already occurred repeatedly every kind of bath treatment must be avoided. After the first attack six months at least must pass before a course of baths is prescribed, so as to be to a certain extent sure that there is no tendency to recurrence. For those persons, however, whose apoplectic fit has occurred more than a year previously a course of baths may be prescribed without any misgiving whatever. In cases of sclerotic contraction of the kidneys (as well as of contracted liver in cirrhosis), according to my experience, treatment by baths is of little use, both as regards the sclerotic process in these organs and the secondary disturbances in the organs of circulation which are dependent on it. For patients of this class who are very much enfeebled baths are absolutely contra-indicated. The same may be said when arterio-sclerosis is combined with diabetes, if patients are very much enfeebled. But if there be no great weakness patients usually feel very well during a course of baths of not too severe a character, if a corresponding mode of life be observed. Patients with aortic aneurysm should only be advised to take a course of baths when the disease has assumed a more stable character. In the course of years I have treated a comparatively large number of such patients. I have usually observed a decided improvement in their general state of health, and likewise in the state of their circulation, without ever having had an unpleasant incident to record. As regards angina pectoris following sclerosis at the commencement of the aorta near the origin of the coronary arteries, or sclerosis of these arteries themselves, I may state that I have seen many patients with all the appearances of angina pectoris take a course of baths with very good results; but others have derived no advantage from it whatever, or only very little. That in the cases first mentioned I had always to deal with true angina pectoris (sclerotic) I will not venture to maintain.

The mechanico-gymnastic treatment is of less importance for arterio-sclerosis than the baths, and can only be applied to a limited extent. A gentle, not too prolonged, general massage is almost always permissible; likewise passive movements may be employed, as thereby only relief of the heart is brought about without any incitement to the energetic output of force and without any increased blood-pressure. As regards the circulation of the blood itself, the result is not usually very great, whereas for the above mentioned diseases that often accompany arterio-sclerosis, such as rheumatism and gout, massage is often beneficial. Resistance gymnastics cannot be allowed in cases of universal arterio-sclerosis of a high degree. The increased energy of the heart action caused by the muscular exercise is only compensated in an incomplete and unsatisfactory manner by a corresponding dilatation of the arteries, and therefore a dangerous raising of the blood-pressure and surcharging of the heart takes place. Instead of an improvement of the cardiac insufficiency in such cases, the opposite is brought about; whereas if the arterio-sclerosis be not advanced or be apparently confined to only a few vascular regions an attempt with resistance gymnastics may be made, but gymnastics must be very gentle—that is, the exercises should be made with little resistance and all trying movements avoided. For this purpose I prefer the Swedish manual gymnastics as modified by the late A. Schott, and which I have made use of since the publication of his first paper on this subject (1881). The mildest form of these manual resistance gymnastics resemble passive gymnastics very much in effect. The incitement to venous discharge from the capillary regions and the peripheral veins, as well as the easing of the arterial current—that is, relief of the heart—surpass by far the increase of the cardiac action which is caused by motor impulse and other circumstances. As regards the so-called Zander mechanical gymnastics for these patients, only those apparatus can be made use of which serve for passive movements, massage, or vibration; yet in exceptional cases some other apparatuses are applicable.

It is a matter of course that patients who have once had apoplexy are not to be treated by resistance gymnastics, nor those patients affected with aneurysm. Some may think the same applies to angina pectoris, but in this disease I have sometimes seen a good result produced by resistance gymnastics. Whether in these cases it was a question of sclerosis of the coronary arteries or not is difficult to say. I can only state that the patients showed unmistakeable signs of arterio-sclerosis. Of course, in these cases, too, the movements must be of the easiest kind, and must be desisted from altogether, as previously explained, if the peripheral arteries are very rigid.

Some patients feel greatly benefited by vibrations applied to the back by Zander machines. Last year I had a patient under treatment who was able to cut short the attacks of angina pectoris by applying vibration to the cardiac regions with a small special apparatus. I must, however, here caution the reader not to regard what has been stated as universally applicable. We must in each case, cautiously feeling our way, try whether gymnastics can be borne, and if there be the slightest doubt we must desist.

Now a few words about the "Terrainkur" (pedestrian exercises). Many patients with arterio-sclerosis complain of oppression even while walking up gentle ascents; but sometimes we hear that such patients feel very well while walking slowly up-hill; however, as a rule, I should not advise methodical hill climbing to be used therapeutically for persons with arterio-sclerosis. Fifteen years ago it happened that a patient with angina pectoris under my treatment while attempting to climb a hill near Nauheim, in spite of my having forbidden it, fell down dead. I have been obliged to express myself very briefly, so as not to exceed the space at my disposal, and have especially avoided, as far as possible, all theoretical views and physiological explanations. My chief aim has been to give some useful hints and advice to the profession, relying upon a large experience gained during many years' practice, and I hope thereby to have been serviceable to some.

Nauheim.

AN ARTIFICIAL LARYNX.

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THE patient for whom I contrived this artificial larynx was a man who had had his larynx removed, on account of carcinoma, by Dr. A. MacCormick at the Prince Alfred Hospital, Sydney, on Jan. 31st, 1895, and was brought under my notice by Dr. MacCormick in the end of the same year. The wound had duly healed, leaving the tracheal opening, in which the patient wore a soft rubber tracheotomy tube with a soft rubber shield, and leaving also above the tracheal opening a small fistula opening into the pharynx. Between these two openings was a wide groove not deep enough to

contain an apparatus of any size. Further, the patient had a deal of chronic bronchitis, and so frequently coughed up a copious tough secretion that any of the artificial larynges I had read of or had seen figured appeared to me to be quite unsuited to his case, owing to the ease with which secretions could lodge on the reed and so silence it. Moreover, in all such instruments, as, for instance, Gussenbauer's or its modifications, where respiration and phonation take place through the same channel, if that channel is large enough for respiration it is too large for phonation, and if it is small enough for phonation, then it is too small for comfortable respiration. Further, where respiration and phonation are through a common opening the reed may sound during ordinary breathing—a most objectionable feature when present. This was recognised by Heine,[1] and Heine accordingly made the reed so that it could be moved aside during respiration—that is, it was in position only when required to phonate. I therefore determined to start on what appeared to be new lines—to make an instrument with which the patient's breathing should be free and unrestrained, and with which therefore he should not habitually breathe through the reed opening, in which the reed should be brought into play only when he desired to phonate, and which, being protected from the secretions of the air and food passages, should continue to act all day long, even during meals. It also appeared desirable that no metallic part should anywhere come into contact with the tissues. It is, moreover, obviously of the greatest importance that the patient should himself be able to apply the instrument, to remove it and to clean it easily. The instrument should also be comfortable to wear and thus willingly worn. All of these conditions were fulfilled by the instrument to be presently described, so that the patient himself applied it and wore it all day long, even during meals, and removed and cleaned it himself. I mention these points somewhat prominently, because from the figures—for I never saw an artificial larynx until I had made one—I should say that, at all events, some of these larynges were anything but comfortable to wear, even if they were efficient as phonators. Indeed, comfort in the wearing of such instruments is almost as important as their efficiency as sound producers, because the patient will very soon lay them aside if they are not comfortable. Further, the flexibility of its parts and the ease with which their exact shape and dimensions can be modified to permit this larynx to be adapted to almost any conceivable case, for each case has its own peculiarities, and, moreover, it requires no very skilled workman to make it, so that it can be made almost anywhere, since there are few places where one cannot find a clock- or watch-maker or a jeweller. As a matter of fact, I have availed myself of such materials only and of such workmanship as may be had in any part of the world almost. This, however, is a distinct advantage, for cases requiring the application of substitute larynges are not so common that in practice the artificial substitutes can be kept in readiness for possible cases.

Hitherto, when speaking of the clogging of the reed, I have had in view mainly the tracheal secretions, but in truth the mouth secretions may be very copious. The difficulty has been recognised and has been met by a lid in Gussenbauer's larynx[2] to act like a little epiglottis, on the theory that the epiglottis acts like a lid, a theory, however, which we have shown to be incorrect.[3] In other modifications of Gussenbauer's larynx an obturator[4] is used; in others a cork or a plug of cotton-wool (Czerny), and so forth. In my instrument the difficulty is entirely got over; no saliva escaped down the pharyngeal tube, and the patient swallowed his meals without any, even liquid, food coming down; but further, even it had come down, it would have been very easy to get rid of it before it touched the reed. I had one larynx made with such a provision (see Fig. 5, *g*), but since I eventually found that it was unnecessary I omitted it in the final form. In Gussenbauer's form the reed can readily be removed and replaced for the purpose of being cleaned, and I fancy that, owing to the secretions and coughing, this will often require to be done. By the protection afforded to the reed in my instrument the necessity for removing it is abolished. I did make a form in which the reed was removable, but I abandoned it when I found that the provision was not needed. Obviously the more simple one can make such things the better—so long as they act efficiently, and of this there can be no question at all in the case of the instrument now under description. The tone of the voice produced was, I dare say, monotonous, as, indeed, has been described in connexion with other instruments of the sort; yet the word monotonous conveys rather a false impression, for although modulation in the sense of varying the pitch of the sound produced within the artificial voice-box was not possible, yet the resonating chambers, by variously reinforcing the fundamental tone and its overtones, did introduce a sort of modulation or timbre which prevented the voice from being quite without character. The patient's family, for instance, told me that in the new voice there was a distinct reminder to them that their father was speaking, with a voice much altered of course, but still with much of the character of the old voice. The reeds which I used were of the commonest. I merely cut into segments the reed-plate of a common mouth-organ; each segment was a reed and the lowest pitched ones were used—viz., d, e, and a. Owing to the untimely death of the patient from scurvy I had not an opportunity of trying other than these reeds, otherwise I should have tried the non-metallic reeds of ivory, horn, cane, and vulcanite which Foulis[5] says he found to be better than the metallic. The modified Gussenbauer's larynx, with the lobster-tailed tracheal and pharyngeal tubes figured in Jacobson[6] shows that the desirability of having the tubes flexible had already been recognised. In the "International Encylopædia of Surgery" already quoted similar devices are said to have been made by von Bruns and by Caselli. In truth, judging from what I saw in my own case rigid unyielding tubes would have been most comfortable. Even the lobster-tailed tubes however, cannot have been so comfortable as the ones I adopted. First, with regard to the tracheal tube, of necessity the patient wears a rubber tracheal tube from the time of the operation, so that by the time he is ready for the substitute larynx he is quite accustomed to the rubber tracheal tube. My form of the larynx, then, is simply inserted into the mouth of this, his ordinary tracheal tube, and nothing new to him is introduced, so that the application of the artificial larynx did not at all worry the patient.

In regard to the pharyngeal tube, it must fit the fistula, or fluids will come down by the side of it, keeping the neck of the patient and the mouth of the tracheal opening continually wet. The size of the tube will vary with that of the fistula, but as the latter is more or less under control (of this more later) it is as well to keep it small, the outside diameter of the tube being a little over 6 mm. It should be quite flexible in every direction transversely, but at the same time rigid longitudinally when compressed, so that it may be pushed into the fistula, and in the movements of the head and neck run no chance of kinking, while at the same time it freely yields to these movements. It should likewise be incompressible laterally, so that no pressure of the muscles or other parts can occlude it. Rubber tubing does not meet these conditions unless the wall be very thick, but in that case the lumen of the tube is very small, considering the size of the tube externally. Further, I found that the valve which I adopted at the upper end of the tube was with difficulty fixed to the rubber. My first successful pharyngeal tube was the vein of an ox hardened in 2 per cent. solution of alum for forty-eight hours. The vein was supported by a closely wound spiral of piano wire half a millimetre thick. The outside measurement of the coil was 6 mm. The coil ended in a less closely wound cupola, at the apex of which the wire was turned into the interior of the whorl, so that it could not injure anything. The vein being left projecting about one-third of an inch beyond the apex of the wire coil, air could pass upwards freely, though fluids could not pass into the tube downwards. The cupolar ending of the coil prevented the wire from cutting the vein, kept the vein from being inverted into the interior of the coil, and gave a more or less pointed end for introducing the tube into the fistula. The wire was not closely wound at the cupola, and thus permitted the air to escape without obstacle. The vein, however, proved too fragile—the wire tore it during the act of introducing it, the movements of the pharynx tore it over the cupola, and the warmth and moisture softened it and made it useless. I then tried tubes of silk, cotton, and thin leather, but finally found perfect satisfaction in winding

[1] Böhm.: Correspondenz-Blatt, No. 17, 1874.

[2] See Fig. 1097, International Encyclopædia of Surgery, vol. v. London: Macmillan and Co., 1885.

[3] See Anderson Stuart and MacCormick: The Position of the Epiglottis in Swallowing, Journal of Anatomy and Physiology, vol. xxvi., 1892.

[4] See Fig. 36, The Operations of Surgery, Jacobson, second edition. London: J. & A. Churchill. 1891.

[5] THE LANCET, Jan. 26th, 1873.

[6] Loc. cit.

a strip, 12 mm. wide, of sheet rubber a quarter of a millimetre thick, such as is used by dentists, slightly on the stretch, obliquely around the wire coil, with its edges slightly overlapping so as to make a continuous tube. The wire coil has, as it were, a spiral bandage of rubber applied to it. The more the rubber is stretched during its application the more unyielding is the resulting tube. If the rubber available is very thin one may have two layers, and in that case one would commence below and wind upwards, and then return winding downwards to the base-collar, to which the rubber is then made fast by a thread. When only one layer of rubber is used one had better begin to wind it above, the upper end being fixed by winding one or two turns, one over the other, before commencing to descend. The valve at the upper end of the pharyngeal tube is made of a piece of suède or kid leather and is absolutely efficient, for while when wet it readily permits the sound-bearing air to pass into the pharynx it quite prevents anything from passing down into the artificial larynx, so that the patient wore the apparatus the livelong day. The valve is attached to the wire coil by a loop of thread around a part of the coil, where two or three turns of the wire are soldered together, so that the thread has no chance of separating the wire turns. The free part of the valve is from 12 to 15 mm. long. At its lower margin it is covered by the rubber, so that there is an easy transition from the surface of the rubber to the leather, and the rubber helps to bind the valve to the wire coil. Before introducing the tube into the fistula the valve should be wetted and rolled between finger and thumb or folded upon itself lengthwise, so that it becomes a sort of point to the tube. The patient may wet the tube with saliva as a lubricant, and while it is being pushed in it should be rolled round its long axis to help its progress. Coughing not unfrequently is excited when the tube enters the pharynx, but in my case it very soon ceased. It is of importance that the pharyngeal tube be neither too long nor too short, for if too short the force required to drive the air through it is too great, while if it be too long it irritates the pharynx and gets in the way in swallowing. To measure accurately the length required I fixed to the base collar a small flexible rubber tube about one and a half feet long; the other end was in my own mouth, and by blowing I kept up a steady air pressure while the tube was passing up the fistula. When the air passed quite freely I marked the length of tube within the fistula, and adding a little extra to allow for movements of the parts I took this as the length of the tube to be ultimately adopted. When the leather wears out the valve can be easily replaced. Placed as I was at the Antipodes, I had, as already said, to work with the materials to be had on the spot, and I accordingly used sheet brass from ½ to 1 mm. thick, soldered at the joints. Owing to their non-corrosibility, gold plate and vulcanite would have been good materials in which to make the permanent form. Further, it might be advantageous to have a sort of hood on the front of the rubber shield to lodge and cover the artificial voice-box, partly to protect it and partly to make it inconspicuous, though owing to its small size this larynx was not very noticeable. I once went along a crowded street with the patient wearing the larynx and hardly anyone noticed him.

The pharyngeal fistula in this case was the upper end of the original wound, so that the line of the cicatrix extended downwards from the fistula. As it was found that the presence of the tube seemed to stretch the cicatricial tissue and dilate the fistula unduly, the fistula was by a subsequent operation closed, and at the same time a new opening in sound tissue was made just below the hyoid bone. A small rubber tube closed at the upper end was kept in the new opening until granulation was complete, and the pharyngeal tube now inserted gave entire satisfaction. I may mention in passing that the epiglottis was absent. At this stage the question was raised whether it would not be desirable when practicable to close the œsophageal wound at the time of the first operation. The pharyngeal opening for the artificial larynx could be made at the same time or subsequently. Meanwhile, the closure of the gullet would prevent the escape of fluids which is such a source of trouble and danger. Should another opportunity of performing the operation present itself Dr. MacCormick proposes, immediately after stitching the trachea to the edges of the skin, to bring together the edges of the mucous membrane of the alimentary canal and secure them with interrupted sutures of catgut, and then to bring together and secure in like manner the edges of the skin with sutures of horsehair. Feeding would thus be from the first by tube through the nose or the mouth, so as to avoid interference with the œsophageal wound, and when the time came for the fitting of the artificial larynx an opening—if not already made at the time of the first operation—would be made just below the hyoid bone, and either in the middle line or to the side, according to circumstances. In the event of the new opening for the pharyngeal tube being made at the time of the first operation the new opening might be made use of to feed the patient by pumping the food through a fine catheter.

Points which the foregoing description may not have made clear will most likely be understood on reference to the figures. **Fig. 1**: The artificial larynx before its tracheal tube *a* is inserted into the rubber tracheal tube, as seen in Figs. 10 and 11. The hood *b* widens the inferior opening of the larynx; owing to this enlarged inferior opening the

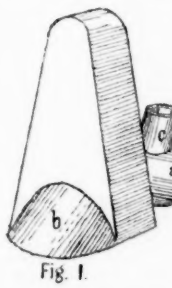

Fig. 1.

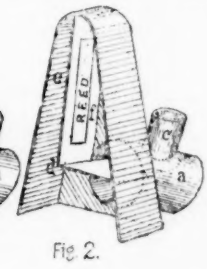

Fig. 2.

escape of the air in expiration is made so easy that very little of it passes upwards through the passage *d* to the reed, and thus the reed does not sound except when the inferior opening is closed during phonation. The closure being effected by grasping the larynx between finger and thumb (the finger on the apex of the larynx and the thumb over the inferior opening), the closure is rendered more easy by filling the right angles of the inferior opening with solder, as is seen in Fig. 4. The complete septum between the butt of the pharyngeal tube *c* and the tracheal tube *a* is partly indicated by a dotted line in Fig. 2, but is seen best in Fig. 3. The arrows in Fig. 3 and Fig. 5 show the direction taken by the air during phonation. **Fig. 2**: The larynx with front removed, showing the opening *d* leading out of the inferior chamber of the apparatus into the chamber *e*, whence the reed opening leads into the chamber *f*, which now leads into the pharyngeal tube *c*. These relations are seen also in Fig. 5. **Fig. 3**: A vertical and antero-posterior section. The dotted parts of the arrows are within the chamber *e*. The lower arrow passes through the opening *d* and the upper arrow through the reed opening. The course of the air in phonation is thus *a*, *d*, *e*, *f*, *c*. **Fig. 4**: The larynx as seen from below. The space *g* is in the simpler form of the apparatus a part of the general inferior opening, but where the chamber *f* is drained, as in Fig. 5, the space *g* is the lower end of the drain; in that case the dotted line alongside *g* in Fig. 5 is a solid septum,

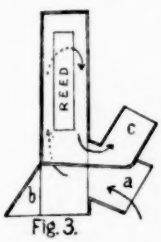

Fig. 3.

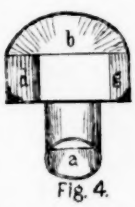

Fig. 4.

Fig. 5.

and the septum between *a* and *f* is wanting above *g*. By the filling up of the posterior angles of the wide inferior opening of the instrument closure by the thumb in phonation in more easily accomplished. **Fig. 5**: A vertical transverse section. This figure shows two modifications which may perhaps be useful in particular cases, though neither was needed in my case. The opening *d* may be closed by

the valve shown when, in violent coughing, secretion is forced up into the chamber *e*. This valve is depressed when the larynx is grasped by the finger and thumb during phonation, and it is raised again by the spiral spring shown around its stem. The chamber *f* may be drained by the channel *g*, if it is found that secretions get into the chamber *f*. This channel also is closed by the thumb in phonation. Figs. 6, 7, 8, and 9 show the pharyngeal tube and its parts:

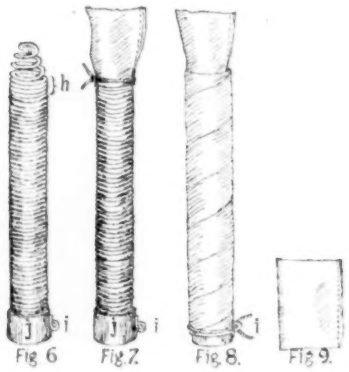

Fig. 6 Fig. 7. Fig. 8. Fig. 9.

the wire collar is soldered to the brass collar *j*, which fits upon the butt of the pharyngeal tube *e*. The three turns at *h* are soldered together, so that the leather valve, Fig. 9, may be tied upon the coil here. The turns in the dome are somewhat widely separated, so as to offer less resistance to the sound-bearing air. The end of the wire is turned within the dome, so that it cannot injure anything. The end of the

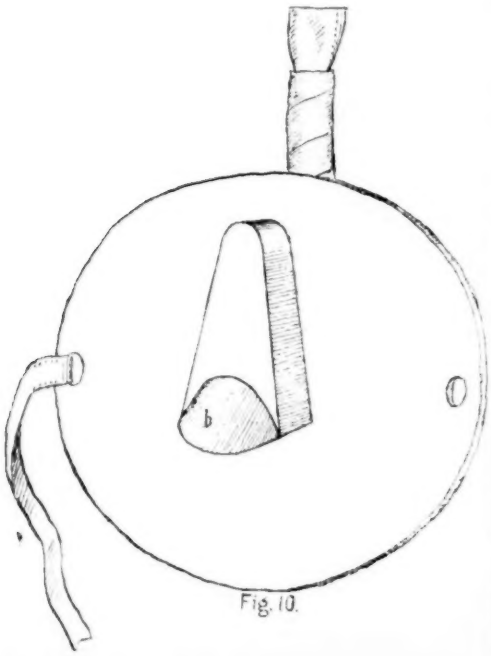

Fig. 10.

thread by which the rubber bandage is secured to the brass collar is brought through the ring *i* and then round the tracheal tube as in Fig. 11, so that the whole is secure. Figs. 10 and 11: Almost a full face view and a full profile view of the entire apparatus fitted up ready for use. The obliquity of the tubes *e* and *a*, as shown in Fig. 3, enables the

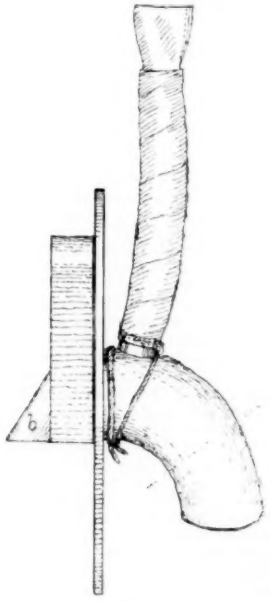

Fig. 11.

larynx to accommodate itself to the direction of the pharyngeal and tracheal openings.

Sydney, New South Wales.

ON CERTAIN SYMPTOMS OF SPINAL CORD AFFECTION IN BICYCLE RIDERS.

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WE have recently been associated with Dr. Hughlings Jackson and Dr. Cayley (to both of whom we are much indebted for suggestions in reference to the present paper), and also with Dr. Voelcker and Dr. Colman, in the care and treatment of a patient suffering from myelitis, in whom the first symptoms—numbness in the perineum and loss of muscular sense in the legs—came on very soon after hard bicycle riding. This case has been the means of directing our attention to the possible association in other cases of symptoms indicating an affection of the nervous system with bicycle riding. The case of the patient referred to above we are not at liberty to publish at present, but we are able to give an account of a case of a similar nature which has been under treatment in hospital.

CASE 1.—The patient was a young man, who had had a chancre, but no sore-throat or skin eruption, and had otherwise enjoyed good health. He was in the habit of riding a bicycle daily and he rode as hard and as fast as he could, and after getting home he not infrequently lay in a draught to cool himself. After some months he found that he had numbness in the penis and perineum, and that during connexion he had no sexual sensation although there was emission. He still continued to use his bicycle, but he then began to have difficulty with his legs, first with the right and later with the left, and he found that he

could not feel the pedals of his machine as he rode. He then had incontinence of urine, and he also found that he had no sensation when he passed a motion. There was now also much adductor spasm in the legs, so that they sometimes became crossed, and remained so until forcibly replaced with the hands. He became unable to walk unless supported on either side, and he had difficulty in lifting the feet, the toes (especially of the left foot) seeming to cling to the ground. There was no wasting of the muscles or change in electrical reactions. The knee-jerks were exaggerated and ankle clonus was present on both sides. There was diminished sensation above the knees, and the sense of position as regards the left foot was lost. His condition gradually improved, so that he became able to walk without support, although there was some unsteadiness, which was chiefly manifested when he stood with his feet together or when in walking he suddenly turned round. His gait was markedly spastic, and the knee-jerks were still exaggerated and ankle clonus was present. There was no impairment of sensibility and he had regained to some extent control of the bladder, although he had no sensation in the urethra when he passed urine, and he had neither erections nor emissions.

This, then, was the case of a man, otherwise apparently strong and healthy, in whom impaired sensibility in the penis and perineum and loss of sexual sensation succeeded hard bicycle riding, and to these symptoms were superadded others which pointed unmistakeably to an affection, probably a slight diffuse myelitis, of the lateral and posterior columns of the spinal cord.

CASE 2.—The next case that came to our knowledge was that of a strong and healthy man, aged thirty-two years, who mentioned in conversation that some years ago, after a long bicycle ride, he experienced a sensation of coldness, numbness, and tingling in the penis. On being recently questioned he repeated the above statement, and in reply to a question said that he did not feel the urine pass if he micturated within some hours after a long bicycle ride, and that he then had to look to see when the stream of urine stopped, having no knowledge of its cessation unless he did so.

CASE 3.—Another patient seen by one of us was a man who spent his last autumn holiday on a bicycling tour. He stated that he experienced numbness, cold, and "pins and needles" in the penis and perineum after riding, and he also noticed that when bicycling, instead of being, as he usually was at other times, regular in his bowels, he never had any call to stool. He went as usual, however, but he passed his motion without any of the ordinary sensations.

In all these cases, apparently, a similar condition existed—viz., a sensation of numbness in the penis and perineum, and loss of sensation during the passage of urine and motions for some hours after riding. We have also heard, through a woman whom they themselves informed, of two sisters, enthusiastic bicycle riders, who habitually experienced numbness in the perineal region after riding, and total loss of sensation when passing urine, this loss persisting for several hours. In Case 1, however, although similar symptoms were present, others were superadded, indicating a more serious condition—viz., an actual affection of the spinal cord. It is not unlikely that in all of them there was produced, presumably through pressure, some condition of the nervous structures subserving the perineal region, possibly analogous to that which obtains in pressure palsy or crutch palsy. It is possible that in the case in which the spinal cord became most involved this condition became an actual neuritis, and that the inflammation spread so as to set up a similar process in the spinal cord. It is a well-known fact that after an operation for hæmorrhoids there may be temporary retention of urine, and in a case mentioned by Mr. Jonathan Hutchinson[1] there was, following such an operation, complete permanent paralysis of the sphincters of the bladder and anus, an effect probably of a localised destructive lesion in the spinal cord. It is probable that a similar mechanism was effective in the case mentioned of myelitis which was preceded by numbness in the perineum.[2]

The matter seemed to us to be so important, in view of the wide prevalence of bicycling as a sport and as a pastime, that we have thought it well to publish these facts without insisting too much upon the connexion of the more serious conditions with bicycle riding. The association is certainly very suggestive, but it will be well to await further evidence before definitely regarding one as the cause of the other. There is no doubt that whatever inconvenience or danger may exist can be altogether avoided, or at least minimised, by attention to the saddle and to the attitude assumed by the rider. One man whom we interrogated informed us that he used to experience sensations similar to those described by the patient in Case 3 until he had adopted a different method of pedalling, what we believe is called the "push and draw stroke," which also necessitates an upright posture, with the weight thrown well back on the ischial tuberosities. There can be little doubt that the attitude in which the rider leans forward over the handle-bar is one in which pressure will be exerted on parts which ought to be free from it. It is also obvious that a saddle or handle-bar which in any way conduces to such a posture is a source of danger. There are other effects of a bad saddle and an unsuitable attitude in the saddle, such as tenderness, swelling, and actual inflammation of the external genitalia, of which two instances have come under our notice. These, however, are outside the scope of this paper, in which our object is to direct attention to the occurrence in certain cases of not only slight, but also severe, affections of the parts of the nervous system specially related to the perineal region and the lower limbs, in association with the use of the bicycle.

[1] Illustrated Medical News, Jan. 26th, 1889.

[2] We have been informed that one who was a well-known professional bicycle rider a few years ago had always to have his urine drawn off after a hard race. Our informant, however, had no actual knowledge of the facts.

NOTES ON ONE YEAR'S SURGICAL WORK.

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THE following paper contains the notes of the hospital work done by me during the year from Sept. 23rd, 1895, to Sept. 23rd, 1896. The number of cases under each head is given and any remarks as to history or treatment that may be of interest have been added. I have carried out the modern aseptic surgery in as strict a manner as possible, and I append the directions which I supply to nurses in charge of my abdominal cases as illustrating how the principles of these modern methods are applied by me in a particular group of operations. For the notes of the cases I have to thank Dr. F. G. Proudfoot and Dr. W. L. Fry, the house surgeons during the period covered.

1. *Radical cures of hernia.*—Eight in number. Operation by Macewen's method, the age of the patients ranging from three years upwards. The patients laid on their backs for six weeks.

2. *Operations for necroses of bones.*—Five in number.

3. *Radical cure of hydrocele.*—Five in number. The method adopted in each case was this: An incision was made over the tumour varying from one inch to two inches in length. The fluid contents were evacuated. The anterior wall of the sac was excised, and then the edges of the skin wound were brought together. No drainage was used.

4. *Osteotomy.*—Five cases. These included two cases of genu valgum and three cases of bowed tibiæ. The method used in the former was that of Macewen's, with the difference that for the chisel a saw was substituted. In the latter cases a small incision was made over the tibia, which was sawn through at the position of the greatest curvature.

5 *Flat foot.*—Four cases. The method adopted in two of these cases was as follows. The metatarso-phalangeal joint of the great toe was excised, and the ends of the bones were brought in apposition and kept there by silver wire loops. By this means the inner aspect of the foot was shortened and a permanent arch was formed.

6. *Kidney.*—The first kidney case died from immediate shock, after a prolonged and difficult operation of removing the remains of a suppurating kidney from which on a previous occasion several calculi had been removed. After the removal of the kidney more calculi were found within, which could not be removed until the kidney was taken away. The second kidney case—a suspected hydro-nephrosis—died from suppression of urine ten days after operation. The kidney was much damaged mechanically in an exploratory operation.

7. *Bronchoceles.*—Five cases. In one of the cases, that of a young girl, the cyst was simply drained. The anterior

wall of the sac was removed and the edges were sutured to the margin of the wound. It continued to discharge for several months, but the last report from the patient stated that the wound had closed up. In the other cases one lobe of the gland was removed. The incision in one case was the ordinary longitudinal incision, in the remainder a transverse incision was employed. In the course of the operation each bloodvessel was clamped with pressure forceps and not ligatured till the tumour was removed. In this way the dangerous part of the operation—viz., the removal of the tumour—was quickly got over, and the wound toilet was performed leisurely. In each case the operation was done because of urgent dyspnœa. In one case, that of a woman, there was subsequent delirium for five days.

8. *Acute abscess requiring incision.*—Four cases.

9. *Abdominal section.*—Four cases. (*a*) A girl, aged twelve years, was admitted because her mother affirmed that she occasionally passed blood in her urine. On examining the abdomen a small tumour about the size of a walnut was felt in the lower part of the abdomen. It was decided to cut down on this. There was no blood in the urine on admission. When the child was under the anæsthetic the tumour was noticed to have disappeared, and to find out what had caused this temporary swelling a small incision was made over the region of the bladder, when the tumour was found to be an abnormally large uterus. This was examined carefully, and apart from its size nothing abnormal was seen. Two days after the operation the patient passed per vaginam a small body about the size of a walnut, which on microscopical examination proved to be a myoma. She made a perfect recovery. The blood mentioned by the mother as coming with the urine was doubtless from the uterus. (*b*) This was a case of severe gall-stone colic in a man, aged thirty-four years, but with no jaundice. A stone was felt near the origin of the cystic duct, but on manipulation it returned into the gall-bladder. (*c*) This was a case of pyonephrosis, with persistent discharge of pus after several operations for removal of calculi had been performed, each time with the removal of calculi. The kidney was found to be merely a sac, with no kidney substance, and firmly bound down by adhesions. No attempt was made to remove the kidney. (*d*) This was a case of prolapsus uteri in a woman, aged forty-seven years. The uterus had been prolapsed for three years and had been treated by means of pessaries with no benefit. The following operation was performed: An incision was made as for oöphorectomy. Each ovary was removed, together with about one inch of the broad ligament. A transverse incision was made through the rectus muscle on each side, and the stump of the broad ligament was brought up and sutured to the division in the rectus on each side. The stump was thus embraced by the rectus muscle and the uterus was drawn well up into the abdomen. The woman made an excellent recovery, and there was no evidence of any prolapse.

10. *Middle-ear disease.*—Three cases.

11. *Amputation of fingers.*—Three cases.

12. *Post-pharyngeal adenoids.*—There were three cases in which post-pharyngeal adenoids were curetted. The method of administering chloroform was to bring the patient only half under its influence and while operating to have the head of the patient well over the end of the table.

13 *Epithelioma of the lip.*—Three cases. One patient, an old man aged seventy years, with very extensive growth, died. After the first operation some of the sutures gave way, leaving a gap. He was anæsthetised a second time for the purpose of dividing the cheek to relax the tension. This was done, but he died somewhat suddenly a few hours after from cardiac failure.

14. *Bursa patellæ.*—Two cases.

15. *Hysterectomy.*—Two cases. (*a*) This operation was performed through the abdomen, the patient being a woman, aged thirty-nine years. There was a history of a swelling in the abdomen for six years, which had increased rapidly within the previous twelve months. On admission the abdomen was found to be much distended, the measurement round the umbilicus being thirty-seven and a half inches. A diagnosis of fibro-cystic tumour of the uterus was made. At the operation an incision, at first three inches long, was made below the umbilicus, and afterwards enlarged to within one inch of the ensiform cartilage. The tumour was found to be incorporated with the uterus. The whole was removed with the exception of the stump of the uterus. The patient recovered well from the operation. Death occurred seven days afterwards from exhaustion following acute intestinal obstruction. Post mortem the bowel was found to be adherent to the stump of the uterus. (*b*) This operation was one of vaginal hysterectomy, the uterus being removed by the method recommended by Martin of Berlin, as follows: The cervix was fixed by volsellum forceps and the uterus was pulled well down. The mucous membrane was divided at the junction of the cervix and anterior fornix. A finger was introduced and the ureter and bladder were pushed well out of the way. The peritoneum was cut through and the fundus of the uterus was grasped and pulled down into the vagina along with its appendages. Both broad ligaments were ligatured and the whole was removed. No attempt was made to suture the peritoneum to the vaginal mucous membrane. The patient, beyond a slight attack of pneumonia, progressed satisfactorily, and left the hospital well one month after the operation.

16. *Varicose veins.*—Two cases. The veins were marked before operation and two tiny incisions were made on either side of the vein, a flat blunt handled needle with ligature attached was passed in at one incision under the vein and out at the other incision, and the needle withdrawn. It was then re-inserted unthreaded at the point of the first incision, being this time passed over the vein and out at the second incision. The needle was then threaded with the end of the ligature and both were withdrawn and the ends of the ligatures were tied. This was done in several places as often as was considered necessary.

17. *Excision of the tongue.*—Two cases. This operation was performed by Whitehead's method, both patients being able to leave the hospital within a fortnight.

18. *Periostitis of the ulna.*—Two cases treated by incision.

19. *Epithelioma of the jaw.*—Two cases, in which the submaxillary glands were involved. In one case the jaw, with the glands, was removed, and the patient left the hospital considerably relieved. The other case was one with extensive involvement of the glands. No attempt was made to remove the jaw, but several of the glands were removed, as they were causing the patient great pain. He left the hospital free from pain, but he has since died.

20. *Tuberculous abscess of the hip.*—Two cases, in which the head of the femur had previously been removed, and one case in which there was no marked disease of bone. Improvement was great in each case.

21. *Scirrhus of the mamma.*—Two cases, in which the breast and glands were very freely removed.

22. *Curettage of the uterus.*—Two cases.

Operations Performed Once.

23. Bad union of both bones of the forearm after fracture above the insertion of the pronator radii teres.

24. Amputation at the hip joint for sarcoma of the head of the femur.

25. Extensive scalp wound.

26. Loose semilunar cartilage, which was removed.

27. Dilatation of the cervix uteri for dysmenorrhœa causing epileptiform fits. The patient was under observation for several months, but there was no recurrence of fits.

28. Ingrowing toe-nails.

29. Adenoma of the breast.

30. A case of abscess behind the sigmoid flexure of the large intestine. The patient, a boy aged fifteen years, was admitted with symptoms of acute intestinal obstruction. There was a history of his having eaten large quantities of walnuts. His temperature on admission was 100° F. After frequent enemata, with a purgative pill containing aloes, cascara, and nux vomica, his bowels were moved freely five days after the constipation had set in. The temperature, however, still kept high, and on further examination tenderness was made out in the left iliac region, with definite fluctuation. An incision was made over this region and a large quantity of fœtid pus was evacuated. A fæcal fistula was diagnosed two days afterwards. The patient for six weeks hovered between life and death, his condition at one time being aggravated by basal pneumonia. Several fæcal stones were removed at the end of the fifth week, and thereafter the patient immediately began to improve. The wound ceased discharging and the boy rapidly became quite well. He remained in hospital for three months.

31. Amputation of the penis for epithelioma of the glans.

32. Urethral caruncle excised.

33. A case of ovarian cyst. In this case there was a history of abdominal swelling for three years and the cyst had been tapped on four occasions. At the operation the cyst was found to be multilocular. Forty-one pints of fluid were evacuated. The cyst was adherent in several places

to the peritoneum. In separating the adhesions part of the anterior layer of the peritoneum was stripped off. The patient recovered well from the operation, and for seven days went on without a bad symptom. At the end of that time, however, symptoms of peritonitis set in, and the patient died. At the necropsy the peritoneum was found to be adherent in several places.

34. A case of empyema in which the pleural cavity was drained, after the removal of two ribs, for six weeks. Eventually the lung expanded to a considerable extent, and the patient recovered.

35. Aural polypus removed by torsion.

36. Case of Tagliacotian skin-grafting after an extensive burn. There was marked contraction at the elbow and wrist. The skin was freely dissected up from the elbow and the arm fixed to a raw surface on the breast for three weeks. The result was entirely successful as regards the raw surface on the wrist, but some contraction at the elbow remained.

37. Urethro-vaginal fistula for torn urethra after labour.

38. A case of ruptured urethra which after several operations made a very good recovery. The case was complicated by the addition of a fractured femur.

39. Erasion of the knee-joint for tuberculous disease in a child. The patella tendon, with the tubercle of the tibia attached, was turned up, the joint was exposed, and all the diseased tissue was removed.

40. A case of imperforate anus.

41. A case of papilloma of the neck.

42. A case of inguinal colotomy for intestinal obstruction, from which the patient died. At the necropsy a large gall-stone about the size of a small hen's egg was found obstructing the small intestine. At the operation no distended intestine was found, though a small piece of the small intestine seemed rather inflamed, but there was no exudation upon it.

43. A case of lupus.

44. Removal of sebaceous cysts.

45. Excision of glands of the neck.

46. A case of gall-stones in which there had been a history of gall-stone colic and jaundice for three years. On opening the peritoneum the liver presented, but no gall-bladder was seen. On passing the hand in a large gall-stone was felt under the surface of the liver. This was removed, and was found to be of the size of a pigeon's egg. The edge of the gall-bladder could not be brought to the surface of the wound. A glass tube was put into the gall-bladder and packed firmly round with sterilised gauze pads. Eventually a tract for the bile formed shut off from the peritoneal cavity. The patient continued to improve, and left the hospital with no bad symptom, the jaundice having entirely disappeared and the stools containing bile.

47. A case of transverse fracture in which the patella was wired. The patient walked with the aid of crutches in ten days. He returned after two weeks with pain in the joint. The silver wire was then removed. In six weeks from the accident he walked about with only a slight limp.

48. Removal of fatty tumour from the shoulder.

49. Division of the tendons of the sterno-mastoid for wry-neck.

50. A case of tuberculous meningitis in which the cerebellum was trephined. The trephine entered just below the occipital protuberance. Some cerebro-spinal fluid escaped. The patient improved for two days, but gradually sank and died.

51. A case of pyosalpinx, in which the ovaries and Fallopian tubes were removed.

52. A case of rectal polypus.

53. A case of hammer-toe.

54. Amputation of the thumb.

55. A case of rodent ulcer.

56. Excision of epitheliomatous glands of the neck.

57. Hæmorrhoids removed by Whitehead's operation.

58. A case of ruptured perineum.

59. A case of hare-lip.

60. Perineal section for extravasation of urine, in which the patient made a good recovery.

61. A case of spina bifida, in which the tumour was opened and the cauda equina found in the centre. This was separated and placed in a trough cut out of the tissue on the sacrum. A portion of the parietal bone of a recently killed rabbit was sutured over the opening in the sacral canal. The patient died.

62. A case of intestinal obstruction by Meckel's diverticulum. The band was found at the operation and divided, but there was evidence of peritonitis then, and the patient died from peritonitis two days after the operation.

63. A case of dermoid cyst of the ovary, which was felt per vaginam and diagnosed as a prolapsed ovary. The patient had been treated for years for malposition of the uterus. The patient made an excellent recovery.

64. There were two cases of amputation at the hip-joint, one being for tuberculous disease of the joint. The patient made a good recovery. The other was in consequence of a sarcoma of the head of the femur. The patient recovered well from the operation, but died five months later from secondary growths in the lungs. The causes of the nine deaths which thus occurred were as follows: (1) obstruction by a gall-stone in the small intestine; (2) excision of the kidney; (3) ovariotomy, adherent peritoneum; (4) fibro-cystic tumour of the uterus, adhesion between the intestines and the stump of the uterus; (5) epithelioma of the lip, heart failure after the second operation; (6) nephrectomy; (7) trephining the cerebellum, tuberculous meningitis; (8) spina bifida; and (9) intestinal obstruction by Meckel's diverticulum.

Oxford.

A Mirror
OF
HOSPITAL PRACTICE,
BRITISH AND FOREIGN.

Nulla autem est alia pro certo noscendi via, nisi quamplurimas et morborum et dissectionum historias, tum allorum tum proprias collectas habere, et inter se comparare.—MORGAGNI *De Sed. et Caus. Morb.*, lib. iv. Proœmium.

ST. MARY'S HOSPITAL FOR SICK CHILDREN, PLAISTOW.

FATAL CASE OF PURPURA HÆMORRHAGICA AND PEMPHIGUS OCCURRING IN A RICKETY CHILD.

(Under the care of Mr. ERNEST A. T. STEELE.)

WHATEVER may have been the etiology and the exact pathology of the case recorded below, it cannot be doubted that a great morbid change had taken place in the blood. It is in some respects very suggestive of "scurvy-rickets," but it certainly does not readily fit into the classical descriptions of cases of that disease.

A female child, aged four years, was admitted into the hospital on July 1st, 1896, with the history that she had never been a healthy child, did not walk till late, and, as the mother said, had "always had rickets." Her diet for a considerable time past had consisted entirely of milk and farinaceous foods. Her present illness began on the evening of June 26th, when she seemed to be poorly and had a slight cough. On the 27th her nose bled a good deal and her gums slightly. On the 29th she developed a papular eruption on the face and limbs and was drowsy. The eruption was scanty and of a dark rose colour, but there were no vesicles or bullæ. On admission into the hospital her condition was as follows:—On the left side of the forehead and left cheek, the right cheek, and both arms and legs there were numerous purple patches varying in size from a sixpence to a five-shilling piece, and in the centre of many of these patches there were large circular bullæ containing dark-coloured serum. (When a photograph was taken eight hours after death the bullæ had collapsed and one over the left orbit had burst.) Both wrists and ankles were swollen, and the child cried if moved. Her temperature was 103° F. and her pulse was 130. There was considerable bloodstained discharge from the nose, but the gums were not bleeding. During the day she passed a small quantity of very dark-coloured urine which, however, could not be saved for examination. She was very restless all day and her breathing became very hurried. The temperature rose to 106° at 10 P.M. At 1.30 A.M. on July 2nd she became very drowsy, had a slight rigor, and died comatose at 2 A.M. At the necropsy, which was made twenty-four hours after death, the main lesions discovered were innumerable small hæmorrhages into the lungs and a decolourised blood-clot in the right heart,

which was distended, the left heart being empty and contracted; there was a decolourised clot filling the superior longitudinal sinus. The organs were otherwise healthy. The bones were soft and porous, and the ends of the ribs were enlarged.

Remarks by Mr. E. A. T. STEELE.—The above case appears to me to have been an advanced type of scurvy-rickets, the most noticeable points in the diagnosis being the history, the long-continued farinaceous diet, and the swelling of the wrists and ankles in the neighbourhood of the epiphyses of the tibiæ and radii. The complication of pemphigus is unusual and difficult to explain. Dr. Sansom has reported[1] a case of purpura hæmorrhagica associated with acute pemphigus, but this was in a girl aged twelve years and was a sequence of influenza.

THE AUCKLAND HOSPITAL, NEW ZEALAND.

TWO CONSECUTIVE CASES OF TETANUS TREATED WITH TETANUS ANTITOXIN AND CHLORAL HYDRATE; RECOVERY.

(Under the care of Mr. ARTHUR MARSACK.)

ALTHOUGH the value of tetanus antitoxin is very generally acknowledged, yet it cannot be said that we are at present fully possessed of exact indications either as to the quantity to be administered or as to the cases in which it is likely to be really beneficial. In many cases, and those not necessarily very severe, but little benefit seems to follow its employment, while in others the improvement is striking and enduring. Under these circumstances it is highly desirable that all those cases of tetanus should be put on record in which the antitoxin has been thoroughly tried. The following two cases are noteworthy in that chloral was extensively used as an adjuvant, and the value of this drug in symptomatic treatment by controlling the spasms is often very marked. For the notes of these cases we are indebted to Dr. J. C. Pabst, assistant medical officer.

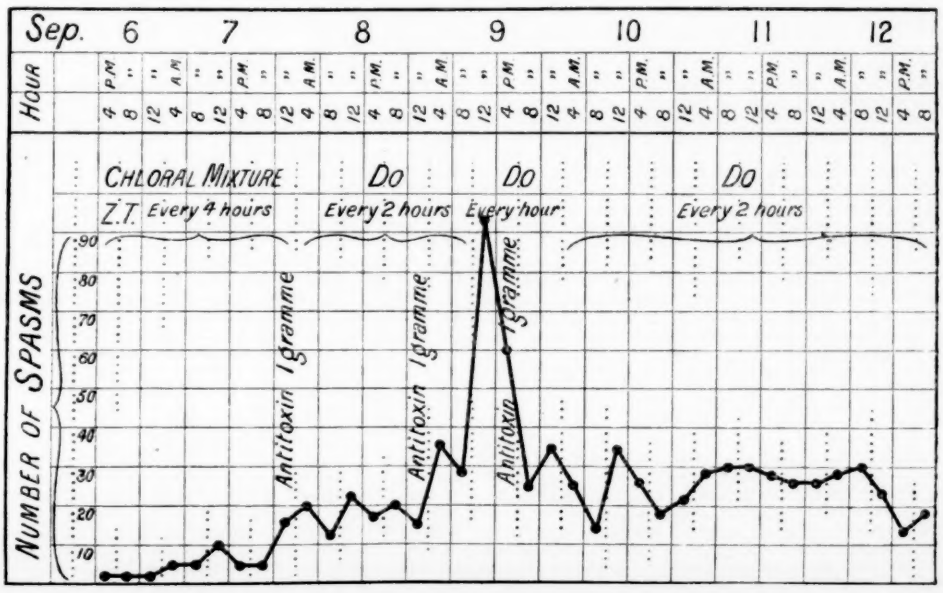
CASE 1.—A lad, aged fifteen years, was admitted to the hospital on the afternoon of Aug. 13th, 1896. He was able to give the following history. On Aug. 1st, whilst walking barefooted, he trod on a piece of glass and cut his right foot. He continued to limp about, and a few days later squeezed some "matter" out of the wound, after which it rapidly healed. On the 5th during a game of football he had a severe fall, but was well enough to continue the game. Next day he went to school, but returned early as he did not feel well. For the next two days he was able to walk about, but did not feel well, and noticed especially a pain in the right hip. On the 9th he noticed that he continually bit his tongue, but though he still had pain in the hip he did not go to bed. There was no change till the morning of the 11th, when he felt too ill to get up; he "felt stiff" in places, especially in the neck, jaw, and legs. In the evening he got up, but shortly afterwards his body becoming "stiff all over" several times, he went back to bed, and passed a very restless night. On the evening of the 12th he was seen by Mr. Marsack, who found him with marked trismus, profuse sweating, and severe clonic spasms. He prescribed belladonna and a purgative, and ordered his removal to the hospital, which was done next day. On admission his temperature was 102 2° F., the pulse 120 and feeble, and the respirations were 22. The tongue was slightly coated and dryish; it was protruded with difficulty. He was mentally clear and very cheerful. There was profuse sweating. There was trismus, the incisor teeth being separated only to the extent of half an inch. Marked risus sardonicus was present. The pupils were equal, a little dilated (belladonna), and reacted sluggishly to light. He lay on his back with his knees slightly flexed. The abdomen felt like a board and the muscles at the back of the neck were very rigid. There was opisthotonos, so that the hand could be easily placed between the back and the bed. The muscles of the thighs and legs were rigid, but those of the upper extremities were quite flaccid. He could flex and extend both arms and legs. There was apparently no loss of power and no loss of sensation. The cutaneous reflexes were greatly exaggerated. The patellar reflexes could not be made out owing to the rigidity of the limbs. He was able to swallow. The heart's action was rapid. The lungs were normal. He complained chiefly of pain in the right hip. On the sole of the right foot there was a small scar in which a small splinter was buried; this latter was immediately removed. The urine was turbid, acid, of specific gravity 1030, and showed a large deposit of urates, but no albumin. The examination was frequently interrupted by short severe spasms. Five grains of calomel were immediately given, and at 3 P.M. one gramme of antitoxin (the dried form from the British Institute of Preventive Medicine) was injected into the subcutaneous tissue of the upper abdomen on the right side. During the next five hours the number of spasms, which had been thirty-six, steadily lessened, until from 7 to 8 P.M. there were only seventeen to the hour. At 8 P.M. another gramme of antitoxin was injected into the left upper abdomen. The lump raised by the first injection had not entirely disappeared, and pressure on the spot caused pain and gave rise to a spasm. At 11 P.M. the patient seemed very drowsy, but his sleep was disturbed every few minutes by a severe spasm. At 12 midnight the spasms still continued, and the prospects of a good sleep appeared bad; he was given a tablespoonful of the chloral mixture, and one gramme of antitoxin was also injected. During the next two hours the number of spasms became reduced to nine and seven respectively; however, as his sleep was still much disturbed the dose of chloral mixture was repeated at 2 A.M. on the 14th. Between 5 and 7 A.M. there were no spasms at all. At 10 A.M. the physical condition of the abdomen, neck, and face was precisely the same as on admission. At 12 noon one gramme of antitoxin was injected, and until 4 P.M. the spasms gradually increased in number and severity. There was considerable difficulty in swallowing. During the night he was delirious and tried to get out of bed. On the 15th, at 9 A.M., he was given two doses of chloral mixture and a suppository containing a quarter of a grain of morphine. His tongue was very sore from his biting it. The respiration was very laboured and noisy, especially during sleep. He was continually bathed in sweat. The trismus, risus sardonicus, and board-like abdomen remain unaltered. At 8 P.M. the question of continuing the use of antitoxin or not was discussed. It was decided to continue, for although no apparent beneficial effect could be detected, neither could it be said that the case was aggravated by its use. One gramme was therefore injected. At 12 P.M. another gramme of antitoxin was injected. The patient slept well during the night after a dose of chloral. At 9 A.M. on the 16th the bowels were well opened by five grains of calomel. Three of the points of injection were very red and tender. At 12 noon one gramme of antitoxin was injected (last dose). From this time till 9 P.M. the patient became much worse, the spasms being so numerous and the opisthotonos so marked that the chloral mixture was given, improvement immediately following. The antitoxin was now discontinued, as it was felt that the bad symptoms which followed so quickly upon the last dose might in some way be due to it. During the next two days the patient's condition remained practically unaltered. The trismus, sardonic grin, and rigidity of the muscles of the abdomen and legs were quite well marked. Chloral was pushed at night so as to secure sound sleep, and discontinued during the day, a dose, however, being given whenever the spasms became so frequent as to cause great distress, and the result was uniformly satisfactory. On the 19th there was an urticarial rash on the chest, abdomen, and back. Four of the points of injection looked angry and the glands in the right axilla were tender; however, as the temperature was not above 99° they were not opened. The body was covered with sudamina. On the afternoon of the 20th the pain in the right hip suddenly increased in severity, so much so that a quarter of a grain of morphine suppository did not give relief and had to be repeated. On the 21st, at 12 noon, as the bowels had not been open for nearly forty-eight hours, an enema was given, a scanty motion resulting. Immediately afterwards the patient was seized with a severe spasm in which the respiratory muscles were involved, the cyanosis being marked. Similar but less severe fits occurred frequently during the afternoon, and his temperature rose to 102 6°. Five grains of calomel were given, and five minims of tincture of digitalis were added to the chloral mixture. The patient passed a very bad night; he was delirious, and had numerous severe spasms. Another morphia suppository (one quarter of a grain) was given. During the next three days the patient appeared to be better, although the tonic rigidity persisted. On the 25th, from 9 P.M. to midnight, there were ninety-nine spasms. Two doses of chloral mixture were given, and the spasms rapidly

[1] Report of a meeting of the Clinical Society, THE LANCET, June 2nd, 1894, p. 1375.

subsided. All medicine was discontinued for four days, only one dose of the chloral mixture being given daily. The patient was allowed solid food on the 29th. On the 31st there was still a little trismus, and the muscles of the abdomen and neck were rigid, though less so than formerly. The lumps formed at the point of injection were much smaller and showed no signs of inflammation. The urticarial rash and sudamina had entirely disappeared. On this date the patient was removed to the general ward as a convalescent. Up to this stage of the case the temperature and pulse had been taken every four hours and the urine measured and tested daily. The temperature during the first week averaged 100°, only once touching 101°. The pulse varied directly with the temperature and ranged usually between 100 and 110. No relation could be detected between the use of the antitoxin and the condition of the muscles or between it and the temperature and pulse. The quantity of urine was fairly constant and averaged fifty ounces daily; there was never any albumin. The patient took his food well, averaging six pints of fluid daily. On Sept. 5th he was able to walk about the ward, and on the 11th he was discharged.

CASE 2.—A boy, aged four years, was admitted to the hospital on Sept. 6th, 1896, at 2 P.M. His mother dated the illness from Sept. 3rd, though she noticed that for a week previously to this he had not taken his food so well and appeared to have a "cold." However, on the date mentioned he was seized with severe "screaming fits," during which he clenched his teeth and bit his tongue. In the intervals he was unable to open his mouth widely and sweated profusely. The "fits" increasing in frequency and severity he was on Sept. 6th taken to Mr. Lewis, one of the honorary surgeons of the hospital, who recommended the patient's immediate removal to the hospital. On admission the patient was found to be a well-nourished and very intelligent child, but he refused to protrude the tongue for fear of having it bitten. His temperature was 98° F., the pulse 96, and the respirations were 32. He was sweating profusely. There was slight risus sardonicus. He could only separate the incisor teeth to the extent of one-third of an inch. There was slight rigidity of the muscles at the back of the neck, but the sterno-mastoids were unaffected. The abdomen was quite lax and there was no rigidity of the extremities. The cutaneous reflexes were exaggerated, but the patellar reflexes were absent. There was very little difficulty in swallowing. The heart and lungs were normal. The pupils were equal and reacted to light. The urine was acid, of specific gravity 1032, and contained neither sugar nor albumin. The patient was immediately placed in a warm bath, after which he was given a powder containing ten grains of calomel and five grains of compound scammony powder, also a drachm of the chloral mixture, the latter to be repeated every four hours. So far the case differed little from one of simple trismus, and although a minute examination was made no sign of a wound could be found. During the night the patient slept for six hours; and at 9 A.M. on the 7th his physical condition was unaltered; the nurse reported nine spasms. On the 8th, at 1 A.M., one gramme of antitoxin (British Institute of Preventive Medicine) was injected, as there was no longer any doubt about the condition; the abdomen was board-like, the muscles of the neck were very rigid, the risus sardonicus was much more marked, and at frequent intervals there were severe clonic spasms which threw the body into a condition of opisthotonos. A powder containing three grains of santonin and five grains of compound scammony powder was given, to be followed by a drachm of castor oil, repeated if necessary. The dose of the chloral mixture was doubled. At 9 A.M. it was noted that there had been sixty-nine spasms in the twenty-four hours. At 11 P.M. one gramme of antitoxin was injected. By 9 A.M. on the 9th the patient's condition was much worse, he lay practically on his head and heels, and the slightest touch precipitated a spasm. The bowels had been opened thoroughly and one motion contained a round worm. At 4 P.M. one gramme of antitoxin was injected. By 9 A.M. on the 10th the patient had had 252 spasms, the majority being very mild. The condition of tonic rigidity of the body remained unaltered. The increase in the number of spasms followed rapidly the last dose of antitoxin. During the next three days the patient improved; the spasms were less frequent and less severe, and the rigidity of the muscles of the abdomen and neck was less marked, though the trismus and risus sardonicus appeared to be unaltered. On Sept. 14th there was an urticarial rash on the abdomen. By the 16th the rash had almost disappeared, but two of the lumps raised by the injection were very discoloured and tender. On the 21st the patient was removed to the general ward as a convalescent. During the whole illness the temperature was very little above normal; the urine, though tested daily, never gave evidence of albumin. The patient was always able to take his food. On the 1st he was discharged. He was able to walk, though the abdomen was still a little rigid.

CASE II - CHART SHEWING SPASMS



Remarks by Dr. PABST.—The foregoing cases complete a list of eleven cases of tetanus treated at this hospital during the past two years. Of the other nine cases (all of which passed through my hands as house physician) seven died and two recovered completely. In five of the cases the patients died within forty-eight hours after the onset of tetanic symptoms. These five cases were definitely traumatic; by this I mean that at the time they came under observation there was an unhealthy wound to be seen. These cases were treated with chloral hydrate, eserine, and morphine, combined with local treatment by the application of carbolic acid to the wound. In two other cases one patient died on the fifth and the other on the sixth day after the first symptoms appeared. Both these cases were indefinitely traumatic—one following a "gumboil" and the other a scratch on the foot; they were treated with chloral hydrate and eserine. The remaining two patients who recovered were both treated with chloral hydrate and bromide of potassium. One was definitely traumatic, following twelve days after a wound of the knee caused by a fall upon a piece of glass; the other was apparently idiopathic, as there was neither history nor trace of any wound. These eleven cases as regards their acuteness fall naturally into two groups:—1. The five rapidly fatal cases which may be taken as examples of acute traumatic tetanus, their severity depending not so much upon the shortness of the incubation period (the most rapidly fatal case of all having an incubation period of twelve days), but upon the rapidity with which the spasms followed one another, and so exhausted the patient. 2. The six sub-acute (fairly severe) cases in which the symptoms after first showing themselves developed slowly. To this group belong the two cases treated with antitoxin and chloral. They were therefore not of the severest type, and it will be noted that both cases had shown symptoms for three days before admission—a period in which the cases belonging to Group 1 had all ended fatally. Still, it would seem that sometimes after the first signs there is a period of quiescence, after which the symptoms reappear with increased severity; this would appear to be what occurred in Case 2, where for the first twenty-four hours after admission there was little else than trismus, after which the symptoms assumed the severest type. Having indicated the type of case (an essential point), it only remains to try to form a correct estimate of the value of the remedies used to bring about the successful result. A difficulty arises in that there are undoubtedly two factors—antitoxin and the chloral mixture. The effect of the chloral mixture had been studied in the two patients mentioned who recovered under its use; it lessened the number and severity of the spasms, and when pushed procured sleep. When given with the antitoxin its beneficial action was quite as apparent; after giving it improvement was expected; if none occurred the dose was increased gradually, and always with the required result. With regard to the antitoxin no improvement at all could be detected after its use; there was nothing comparable to the improvement seen to follow an adequate dose of diphtheria antitoxin in a case of diphtheria. On the other hand, in both cases the injection of the antitoxin was sometimes (not always) followed by aggravation of all the symptoms. Still, the duration of the two cases treated with antitoxin and chloral was much shorter than those two treated with chloral alone, the general prostration was less, the stage of convalescence was shortened, whilst the acute stage was about the same length. In this respect there is some resemblance to diphtheria in which a case sufficiently bad to be treated with antitoxin often convalesces more rapidly than a case which has been so mild as not to require antitoxin. This shortening of the course of the disease was to my mind the most marked feature in both cases and must be ascribed to the antitoxin. On the whole, though both these cases might possibly have recovered under chloral alone, I believe that the antitoxin was of value probably in the way of preventing the rapid development of severe symptoms; that it shortened the course of the case I feel certain. Some other points require notice. In using the antitoxin the directions issued with it were carefully followed. A rather turbid fluid was the result, and the lump raised by its injection served as a source of peripheral irritation. For this reason a more potent antitoxin would be an improvement and is more called for than in the case of diphtheria. The urticarial rash was probably a direct result of the antitoxin, but not so the sweating, which was equally profuse on admission, and, moreover, was a marked symptom in the fatal cases in which the patients did not have antitoxin. I have come to the conclusion (1) that moderately severe cases may recover under the use of chloral and bromides; (2) that although cases have recovered under tetanus antitoxin alone, its use should not preclude the adoption of measures to meet the urgent symptoms which are almost constantly present, and that in this respect the treatment should resemble that of diphtheria, where the successful issue of a case in which the antitoxin has been used so often depends upon the prompt way in which every symptomatic indication is met; and (3) that the treatment which offers the best prospects of success is that in which tetanus antitoxin is combined with chloral and bromides.

Medical Societies.

ROYAL MEDICAL AND CHIRURGICAL SOCIETY.

Hernia Cerebri.—Non-tuberculous Posterior Basic Meningitis.

A MEETING of this society was held on April 13th, the President, Dr. HOWSHIP DICKINSON, being in the chair.

Mr. LAWFORD KNAGGS read a paper on a case of Compound Depressed Fracture of the Skull, followed by Cerebral Abscess and Hernia Cerebri, together with a consideration of the subject of hernia cerebri based on 100 collected cases. The patient, a man, was operated on for compound depressed fracture of the left parietal bone on Sept. 11th, 1894. Though the membranes and the brain were injured, and the wound subsequently suppurated, healing took place in due time, and he became an out-patient on Nov. 28th. He was re-admitted in February with some cerebral symptoms and a protrusion of the soft parts over the bony aperture. On Feb. 4th he was unexpectedly found at the point of death, and the swelling was explored and then opened with a penknife by Mr. Thompson, the resident surgical officer. An ounce of pus was evacuated from a cerebral abscess, and the patient brought round by artificial respiration. Hernia cerebri and paresis of the right arm and leg at once developed. The former grew as large as a hen's egg in a fortnight, remained stationary for three weeks, and then shrank, and by July 7th had disappeared. He left the hospital on Aug. 3rd well, except for some remaining weakness of the forearm muscles and a hesitation in his speech; and a year later his condition remained unaltered, except that he had a fit every eight weeks. He was working as a labourer. In discussing the subject of hernia cerebri the intracranial conditions which produce it were described—viz.: (1) increased tension; (2) a softened or diffluent state of a portion of the cerebral substance; and (3) inflammation of the brain substance, which leads to an increase in bulk, to its softening, and when prolonged to its replacement by granulation tissue, and finally by cicatrix. The inflammation also impairs, suspends, or even destroys the functions of the centres implicated. The duration and size of the hernia are influenced by the extent of the inflammation. The causes are traumatism and sepsis, either separate or in combination. If sepsis be avoided the inflammatory effusion is gradually absorbed and the protrusion will certainly dwindle and disappear after it has reached its maximum. The time required varies from a few days to several months, and depends on the amount of brain involved and the absence or presence of any continued irritation. The results of septic infection are abscess, meningitis, and diffuse inflammation, and abscess is the only one that is not always fatal. Hæmorrhage and abscess may be associated with hernia cerebri, and attention was drawn to the importance of gravity in certain cases and to the sudden but transient enlargement of the tumour, which may result from trivial causes, either local or general, such as probing the wound or an attack of tonsillitis. The prognosis was stated to be good if sepsis were avoided, and it was to be borne in mind that septic infection might be a result, not only of the original injury or consequent operation, but of interference. The results of treatment by pressure, by caustics, and by various operative procedures, as well as of those left to nature, were then fully considered, and the conclusion arrived at that most of the recoveries were due to natural processes, and that most of the successful cases would probably have recovered if left alone. Three more might have recovered

nowadays without mutilation of the brain, but for the remaining three excision must have credit given to it. Sepsis was the almost universal cause of death, and the increased percentage of deaths in the operative cases (28 5 per cent) was not without significance. Treatment should be: 1. Preventive. Every case of compound depressed fracture of the skull should be thoroughly treated, and the wound made aseptic. This is now generally done, and probably accounts for the rarity of the cases in current literature. 2. Non-interference should be the rule, and the tumour allowed to run its own course. 3. Operative treatment may be necessary when abscess is present, and should aim at evacuation, not mutilation. It may be necessary to remove embedded fragments after their position has been demonstrated by skiagraphy, but it was difficult to imagine a condition in which excision could be justified.—Mr. BALLANCE congratulated Mr. Lawford Knaggs on the result of his case and on his exhaustive treatment of the subject. He attributed the rarity of hernia cerebri at the present time to the successful avoidance of sepsis. Provided that there was an aseptic condition, as in surgical operations, extensive injury might be done to the brain without hernia cerebri. After an accident it might be impossible to obtain an aseptic condition of the parts. He found it difficult to believe that the hernia might push through the uninjured dura mater. The cases ought certainly to be carefully treated at the onset, and he was in hopes that the surgeon might be able to deal with and render aseptic compound fractures of the base as well as those of the vault.—Mr. LAWFORD KNAGGS, in reply, said that he thought that he had seen some patients in whom hernia was due to traumatism without sepsis, and in one of the patients who died the post-mortem appearances were quite the reverse of any septic inflammation.

Dr. J. WALTER CARR read a paper on Non-tuberculous Posterior Basic Meningitis in Infants. The object of the paper was to show that there was a distinct form of meningitis, occurring almost exclusively in infants, which has not at present received adequate recognition, though described by Dr. Gee and Dr. Barlow in the St. Bartholomew's Hospital Reports for 1878 under the title of "The Cervical Opisthotonos of Infants"; that it mainly affects the posterior part of the base of the brain, is entirely independent of tuberculous disease, runs a sub-acute or chronic course with fairly characteristic symptoms by which it can be diagnosed during life, and presents very constant and definite post-mortem appearances, although its actual causation remains at present unknown. The description of this disease was based upon eleven cases observed by Dr. Carr at the Victoria Hospital for Children, Chelsea, narrated in detail, and compared with those recorded by Dr. Gee and Dr. Barlow in the above-mentioned paper. All the cases occurred in previously healthy infants under a year old; the onset was gradual in some, sudden in others; but in all, the most constant and characteristic symptoms were severe vomiting, extreme retraction of the head, and stupor passing into coma of remarkably long duration, generally several weeks, the excessive retraction of the head persisting to the last. The cases all terminated fatally, none in less than five weeks, whilst some lived for three months or even longer. At the necropsies (ten in number) inflammation of the pia arachnoid was found over a very definite area at the base of the brain, hydrocephalus in all the cases, and in some closure of the openings between the fourth ventricle and the sub-arachnoid space. In no instance was any sign of tuberculous disease discovered, either in the cranial cavity or elsewhere. The possible causation of the ventricular effusion was fully discussed in the paper. The possible connexions of the disease with injury, ear disease, and congenital syphilis were successively discussed, and reasons given for concluding that none of these could be really causes of the meningitis. It was suggested that possibly there might be some relation between the disease and epidemic cerebro-spinal meningitis, but that bacteriological investigation only could determine this, and at present this had not been carried out. Under diagnosis the chief points of distinction between this disease and other forms of meningitis, especially the tuberculous variety, were fully described. In regard to prognosis, it was stated that, whilst usually fatal, recovery was probably not impossible, and cases were quoted in support of this, and to show that the disease may occasionally give rise to ordinary chronic hydrocephalus. As regards treatment, it was said that medical treatment was probably of little avail, and the question of operative interference, either by tapping the lateral ventricles or by trephining, was therefore discussed. In two of the cases described the former measure was tried without evil effects, and in one with distinct improvement, all acute symptoms subsiding, and the child living for several months. Trephining in two other cases proved rapidly fatal, the great danger consisting in too rapid an escape of fluid.

MEDICAL SOCIETY OF LONDON.

Extroversion of the Bladder.—Spastic Hemiplegia.—Acromegaly.—"Baker's Cyst" of the Knee.—Osteotomy for Deformity.—Sarcoma of the Thumb.—Spontaneous Fractures.—Multiple Tumours of the Skin.

A MEETING of this society was held on April 11th, the President, Mr. REGINALD HARRISON, being in the chair.

The PRESIDENT showed a case of Extroversion of the Bladder treated by left nephrectomy and transplantation of the right ureter through the loin. The patient, now fifteen years of age, came under observation in July, 1895, in a very emaciated condition, with congenital extroversion of the bladder and epispadias. The posterior wall of the bladder protruded, and both ureters were visible. The thighs were excoriated. In January, 1896, the urine having been ascertained to be normal, the left kidney was removed by a lumbar incision, and eleven months later an incision was made in the right loin, and the ureter of the remaining kidney found and divided, and its proximal end brought out to the lumbar incision, where it was attached by one silk suture, and urine at once issued from it. As the ureter was being manipulated there was continuous and violent retching, which was also troublesome for a few hours after the operation. During convalescence there were some unexplained attacks of pyrexia. The urine now flows readily from the wound, where an apparatus is to be worn to collect it. The urine is clear and does not irritate the skin, and there has been no tendency to the deposit of phosphates. The boy is able to maintain the erect position. As there are some signs of cicatrisation in the exposed vesical mucous membrane, any attempts to close it in by plastic operations have been postponed. Possibly this method might enable the surgeon to extirpate the bladder for malignant disease or for some advanced forms of suppurative disease.—Mr. MORGAN inquired what were the reasons for sacrificing the left kidney. The freedom from phosphatic deposit in the urine was very striking. The method was novel, and deserved careful consideration, as ordinary attempts to ameliorate the local condition were usually very disappointing and complete closure rarely obtained. The condition of the bladder did not appear to have been much improved by the operation.—Mr. STANLEY BOYD thought that it was too early to say much about the value of the operation, as there were risks both of ureteral stricture and of "surgical kidney." He could see no reason for removing the left kidney.—The PRESIDENT, in reply, said that he removed one kidney because it would have been extremely difficult to collect the secretion satisfactorily from two orifices.

Dr. ROLLESTON showed a case of Spastic Hemiplegia after Whooping-cough. The patient was a girl, aged thirteen years, with right spastic hemiplegia associated with a varying amount of athetoid movement. The condition dated from an attack of whooping-cough when ten months old, and was considered to be due to hæmorrhage into the cortex from one of the cerebral veins during a paroxysm of coughing. The face, speech, and mental powers were unaffected. The upper limb was extended and hypertrophied. The wrist was flexed and adducted to the ulnar side, and the fingers were flexed into the palm; occasionally, especially on excitement, there was mobile spasm of the fingers. The muscles of the arm and that side of the chest were hypertrophied from the constant spasm. The right leg was spastic; there was no exaggeration of the knee-jerk. The patient was bright mentally, although ill health had interfered with her education.—Dr. MAGUIRE said that without knowing the history the case might have been put down as due to hysteria. He agreed that the only possible lesion was a cortical hæmorrhage. The prognosis was not good, as a large proportion of these cases developed epilepsy about the age of puberty.—Dr. GUTHRIE thought it surprising that cerebral hæmorrhage did not occur more frequently in whooping-cough. He had recently seen a case in which right hemiplegia and aphasia

occurred suddenly during an attack of whooping cough. The hemiplegia passed off after a few months and speech returned, when an attack of left hemiplegia occurred, and the child was now, he feared, permanently dumb.

Dr. ROLLESTON also showed a woman, aged twenty-six years, suffering from Acromegaly. For two and a half years the hands and feet had been getting larger, the nose becoming more prominent and the face enlarging, while amenorrhœa had existed for the same period. For a month before admission to St. George's Hospital, in October, 1896, she had suffered from severe headache. Under treatment by thyroid and pituitary extract combined this symptom had been relieved, though the skeletal changes remained. The treatment had been continued with good result since her discharge from the hospital, so that the good result could hardly be explained merely as the result of rest in bed. A somewhat similar beneficial result had been obtained in a more advanced case of the disease. Since pituitary extract alone had been found to be unsuccessful, and since there were some superficial resemblances between acromegaly and myxœdema, it seemed reasonable to try a combination of pituitary and thyroid extracts. Physiologically the action of these two extracts was opposed, and it seemed possible that acromegaly was the result of a disturbance of a chemico-physiological equilibrium maintained in health by the activity of these two glands.

Mr. W. H. BATTLE showed a woman, twenty-four years of age, with a "Baker's cyst" in the calf communicating with the knee-joint. There had been pain and swelling in the calf for some time, and a fluctuating swelling could be felt beneath the deep fascia. On examination it was found that there was a painless effusion, with very little synovial thickening, in each knee-joint, and a semi-membranous bursa communicating with the joint. There also appeared to be a communication between the cyst and the semi-membranous bursa. It was difficult to explain the effusion, which had remained stationary for three years.—Mr. BATTLE also showed a woman, twenty-one years of age, on whom he had performed Osteotomy for Extreme Deformity. There was extreme genu valgum of one leg and equally marked genu valgum of the other. Successive osteotomies by Macewen's method were performed, and the girl, who had previously been bedridden, was now able to walk without pain and without the aid of any apparatus.—Mr. BATTLE also showed a boy who fell and sustained a Compound Comminuted Fracture of the Patella. The wound was cleansed, some of the fragments removed, and others united as far as possible with wire, and the boy had now been able to return to his employment.—Mr. BATTLE also showed a Giant Thumb which he had removed in January from a man fifty years of age, for sarcomatous degeneration of an enchondroma, which had existed, with many others on the hand and forearm, from infancy. The tumour microscopically was a spindle-celled sarcoma, with remains of cartilage tissue. The sudden enlargement appeared to have followed an injury. The man had since died from "chronic bronchitis," possibly associated with secondary growths in the lungs.—Mr. MORGAN said that degeneration of these tumours was very rare. He had recently published a case in THE LANCET in which a congenital tumour degenerated into a sarcomatous growth at the age of fifty years.

Dr. L. G. GUTHRIE showed a Jewish child, two years of age, suffering from Multiple Spontaneous Fractures. The child was brought up on cow's milk and water, the milk being probably of poor quality. Four months previously discoloured patches "like bruises" were noticed about the thighs, arms, and clavicles. On admission to hospital the child was found to be very badly nourished, extremely sensitive to any manipulation, and there were definite fractures of the shafts of the clavicles, femora, and the right humerus, with considerable deformity. Skiagrams were shown demonstrating the lesions of bone. Several of the fractures had united, but there was still mobility of some. He believed the condition was probably due to scurvy-rickets, although there was no positive evidence of the condition, except, perhaps, the bruises. The child had rapidly improved on a diet of milk and cream, with raw meat juice and orange juice.—Mr. MORGAN said that he had just now under his care at the Hospital for Sick Children, Great Ormond-street, a boy seven years of age, also a Jew, with deformities due to a condition similar to that in Dr. Guthrie's patient. He thought the diagnosis of scurvy-rickets questionable, as in that disease the hæmorrhages and fractures were usually near the epiphyses, and not in the centre of the shaft.

Mr. F. C. WALLIS showed a man who had been under treatment for some years for a Mass of Glands on the right side of the neck believed to be lymphadenomatous. There were thirteen of these swellings, some of them as large as a turkey's egg. They were excised and found to be undergoing calcareous degeneration. The wound healed quickly, but lately about 100 subcutaneous tumours had appeared in the adipose tissue of the abdominal wall and elsewhere.

CLINICAL SOCIETY OF LONDON.

Sarcoma of the Prostate.—Ovariotomy in a Child.—Hydatid Cysts of the Liver, Pleura, and Abdominal Cavity.

A MEETING of this society was held on April 9th, the President, Dr. BUZZARD, being in the chair.

Mr. HOWARD MARSH related a case of Sarcoma of the Prostate. The patient, aged fifty-seven years, was admitted into St. Bartholomew's Hospital in May, 1896. Two and a half years previously laparotomy had been performed for a tumour, which on exposure seemed to be a sarcoma growing from the left ilium. As the tumour could not be removed the abdomen was closed. When the patient came into St. Bartholomew's Hospital a tumour was found involving the prostate, and so large that it filled the pelvis, displaced the bladder, and so pressed upon the rectum that the bowels could not act, and the abdomen was becoming distended. Colotomy was performed, but the patient died. On post-mortem examination it was found that, apparently from the dragging action of several pounds of dry fæces in the colon and sigmoid flexure, the bowel at one point had fallen away from the wound and that acute peritonitis had followed. The tumour, which measured 7½ in. by 4½ in., was enclosed in a firm fibrous capsule. On section it was of a whitish colour and firm consistence. On microscopic examination it was a spindle-celled sarcoma. Mr. Marsh remarked that both sarcoma and carcinoma occurred in the prostate, though both were rare. Not a few cases of sarcoma had been met with in quite young children, a good example being that recorded in a boy, aged five years, by Mr. Spanton. The affections had occurred in all the decades of life up to the age of seventy-five years. The chief symptoms were:—1. Difficulty of micturition. In some cases the urethra was completely destroyed by the growth, in other instances, however, micturition had been scarcely, if at all, interfered with. 2. Difficulty of defecation from pressure on the rectum. 3. The presence of a tumour in the situation of the prostate. 4. Hæmorrhage from the urethra; but this was frequently entirely absent. 5. Pain, sometimes only slight, but in some cases extremely severe. 6. The bladder was displaced so that it lay, not in the pelvic cavity, but in the hypogastric region of the abdomen. As to treatment, but little that was satisfactory could be done. Removal of the tumour was usually impossible; in some instances it was necessary to drain the bladder by supra-pubic puncture, while in many colotomy for the relief of intestinal obstruction had been necessary. In cases in which the growth was a firm spindle-celled sarcoma patients had lived for four or five years; but where, as often in children, the tumour was a myxo-sarcoma undergoing softening and tending to infiltrate the surrounding structures, death occurred in the course of a very few months.—Mr. BLAND SUTTON said that knowledge of the minute anatomy of prostate tumours was still very imperfect. The terms "scirrhus" and "encephaloid" were often applied to such tumours from their superficial resemblance to similarly named growths in the mamma. Carcinoma of the prostate was most liable to occur in advanced life, and gave rise to secondary deposits in the bones. The soft tumours in young people, often described as "encephaloid," were probably sarcomata, as in the case related by Mr. Marsh. Sarcoma might occur in children under the age of ten years. He mentioned the case of a boy, seven years of age, who, after difficulty in emptying his bladder, extending over a few weeks, came under observation with a soft tumour presenting in the perineum. An exploratory incision was made, and a piece of the growth removed and examined and found to be sarcomatous. He died soon afterwards, and secondary growths were found in the lungs. The condition

of the parts after death is shown in the accompanying illustration. He had also received from others sections of similar tumours removed from children. The prostate therefore resembled the retina, ovary, and kidney in the liability to sarcoma in the first ten years of life, the liability recurring in the third decade.—Mr. JOSEPH GRIFFITHS showed a specimen of sarcoma of the prostate in a child extending along the urethra. He insisted on the importance, for purposes of diagnosis, of examining the condition of the urethra through the rectum. A bougie should be first passed down the urethra. In simple enlargement of

Sarcoma of the prostate, from a boy aged seven years.

the prostate there was never infiltration behind the membranous part of the urethra, but in malignant disease of the prostate thickening of the urethra in this situation could almost always be felt.—Mr. J. H. TARGETT showed a specimen of the same kind from the museum of Guy's Hospital. He thought that many of these cases arose in the connective tissue of the recto-vesical folds.—Mr. S. G. SHATTOCK remarked on the atrophy of the glandular elements of the prostate after double castration. It was possible that this was partly due to loss of internal secretion of the testis, and seeing the effect that double ovariotomy appeared to have in arresting malignant growths of the mamma he suggested a trial of double castration in these cases.—Mr. BUCKSTON BROWNE did not think that infiltration was always to be felt behind the urethra, and mentioned a case in which it was almost all in front, giving rise to a distinct prominence above the pubes. He remarked that hæmorrhage was more common in carcinoma of the urethra than in sarcoma. Severe neuralgic pain, often simulating double sciatica, was frequently met with in carcinoma of the prostate.

Mr. RAYMOND JOHNSON reported a case in which Axial Rotation of the Pedicle of an Ovarian Cyst was met with in a child five years of age. She had been ailing for six months, and during that time had suffered from numerous attacks of abdominal pain attended with diarrhœa and vomiting. These attacks increased in frequency and severity, and three weeks before the child was brought to the Victoria Hospital for Children the abdomen was noticed to be swollen. On admission the child was thin and looked ill; the temperature was 101° F. The abdomen was considerably distended, and the right half was occupied by a tender elastic swelling, which was most prominent below and to the right of the umbilicus. The diagnosis of localised tuberculous abscess of the peritoneum was made, and operation was at once undertaken. An incision was made over the prominent part of the swelling in the right linea semilunaris and a cyst of the right ovary was exposed. The wall of the cyst was hæmorrhagic and the pedicle had undergone two complete rotations. Ovariotomy was performed, the child making an uneventful recovery. The general features of the case were so suggestive of tuberculous peritonitis that the question of the diagnosis between a localised abscess and a cyst was not really taken into consideration. The case was recorded on account of its rarity, no other record of axial rotation of an ovarian pedicle in a young child having been discovered. Indeed, ovariotomy in a child of five years is sufficiently unusual to make the case of interest.—Mr. BLAND SUTTON said that out of all the cases of ovarian tumour that he had collected, only 15 per cent. were in children under ten years of age. Statistically, ovariotomy appeared to be most successful between the ages of ten and fifteen years; below the age of ten years it was not so successful. Twisting of the pedicle was unduly common in children, although the usual causes of that condition in adults—association with uterine myoma, pregnancy, or tumour of the opposite ovary—were not present.

Mr. W. G. SPENCER related a case in which Hydatid Cysts were removed from the Left Pleural Sac, from behind the Mesentery, and from the Right Lobe of the Liver. The case was that of a young women, aged twenty years, whom he had seen with Mr. Thomas Bond. She was supposed to have suffered from an attack of pleurisy, and they thought that an empyema had formed and was tending to point below the left costal margin. On incision of the prominent swelling a hydatid cyst was found occupying the lower half of the left pleural cavity. The parasitic cyst was removed without tearing it by passing a stream of water from an irrigator between it and the adventitious cyst. Upon the patient coughing the lung expanded, burst through the adhesions representing the adventitious cyst, and filled the whole cavity. The patient recovered the complete use of the left side of the chest. Meanwhile, dulness and resistance increased on the right side in the region of the liver from the nipple down to the level of the umbilicus. Two months after the first operation an abdominal incision was made, the liver hooked up, the large and small intestines pushed aside, the mesentery cut through, and the cyst, situated behind the mesentery and distinct from the liver, reached. The parasitic cyst was removed as before and the adventitious cyst washed out and sewn up. Finding that the cyst in the right lobe of the liver could not be reached, the abdominal wound was sewn up. An incision was then made into the pleura through the tenth interspace in the right mid-axillary line, the diaphragm stitched to the upper edge of the wound, and then incised. The cyst was reached one and a half inches within the liver and was drained. Fluid, shreds, and hooklets came away through the wound, and the patient has gradually recovered complete health. Mr. Spencer pointed out the dangers which might have attended operation either from sudden flooding of the lungs or from hæmorrhage, and how much safer and better than aspiration were incision and removal of the cyst.—Mr. HOWARD MARSH congratulated Mr. Spencer on the result of his treatment of the case. He thought that everyone would endorse his condemnation of the old practice of aspirating hydatid cysts. He had found the method of floating the cyst by irrigation described by Mr. Spencer very easy and successful. The closure of the adventitious cyst was often a very long and tedious process.—Mr. F. C. WALLIS had seen two patients suffering from hydatid cyst die directly after tapping. If the cyst was dead there were usually adhesions between the parasitic cyst and the adventitious cyst, and the method of washing out might fail. In that case it was quite easy to separate the parasitic cyst with the finger.—Mr. MAKINS said that cases like this one gave the surgeon great anxiety, as when it was discovered that there were more than one cyst he was left in doubt as to how many more might be distributed among the internal organs. The closure of the fistula was often a difficult result to secure; he recalled one case in which such a fistula from a hydatid cyst of the spleen never closed, the patient ultimately dying from amyloid disease. In some cases these sinuses had been shown to become tuberculous. Among the many objections to aspiration was the chance that the cyst might be packed with daughter cysts and only a few drops of fluid obtained when there was really a large cyst present.

OBSTETRICAL SOCIETY OF LONDON.

The Treatment of Placenta Prævia by Champetier de Ribes' Bag.—Exhibition of Specimens.

A MEETING of this society was held on April 7th, Dr. C. J. CULLINGWORTH, the President, being in the chair.

A vote of condolence with the family of the late Sir Spencer Wells was passed.

Dr. G. F. BLACKER read a paper on the Treatment of Placenta Prævia by Champetier de Ribes' Bag. He said that in the more severe cases of hæmorrhage from placenta prævia Champetier de Ribes' bag might be employed in place of version by introducing it into the amniotic cavity after rupture of the membranes. Used in this way the bag acted both as a tampon in arresting the hæmorrhage by pressing the separated portion of the placenta firmly against the uterine wall, and also as a dilator of the cervical canal and a very powerful stimulus to uterine contractions. The use of the bag was therefore advocated in grave cases of hæmorrhage from placenta prævia as an easy method of arresting the hæmorrhage, and at the same time as likely to reduce the heavy fœtal mortality which usually occurred in these cases after the performance of version. Dr. Blacker had treated 5 cases of placenta prævia in this way, and had collected 17 other cases similarly treated. The details of these cases were given in full in the tables accompanying the paper. An analysis of the chief features of interest in the cases was given, showing that only in one case did severe hæmorrhage occur after the introduction of the bag; that such hæmorrhage might, as a rule, be readily controlled by traction upon the bag; that in none of the cases was any difficulty experienced in introducing the bag or was preliminary dilatation of the cervix necessary; and that the average length of time required for the complete dilatation of the cervix after the introduction of the bag was five hours and ten minutes. Of the mothers, 1 died from septicæmia—probably present on her admission to the hospital—before the introduction of the bag. Of the others, 5 had a slight elevation of temperature during the puerperium, the highest point reached being 100·6° F.; while in the remainder recovery was perfect and the puerperium afebrile. Of the 22 children, 14 were born alive, and 8, or 36·3 per cent., dead. Of the 14, 4 subsequently died, giving a total mortality of 54·5 per cent. The advantages claimed for the bag were: (1) ease and facility of introduction; (2) the certain arrest of the hæmorrhage; (3) any further hæmorrhage was controllable by traction upon the bag; (4) the bag, and not the child's body, dilated the cervical canal; (5) the ease of delivery after expulsion of the bag; (6) the fact that the bag was a very powerful stimulus to uterine action; and (7) the lessened fœtal mortality as compared with the results obtained after version. The objections brought against the use of the bag were considered—viz., the risk of septic infection, the danger of rupture of the uterus, and the displacement of the presenting part caused by its introduction. The further objections that the bag was difficult to introduce, and that preliminary dilatation of the cervix was required, were shown to be groundless. Even in cases of central placenta prævia the use of the bag was practicable and likely to give results just as good as, if not better than, the performance of version.—Dr. HERMAN agreed with Dr. Blacker's practical and useful paper. He thought the bag was a better plug than the half breech, because it pressed on the whole circumference of the lower uterine segment, while the half breech did not. The hæmorrhage in placenta prævia was produced by dilatation of the cervix, hence the bag could always be introduced when considerable hæmorrhage had occurred. His own experience of the use of Champetier de Ribes' bag in placenta prævia was altogether favourable.—Dr. HORROCKS said that he had for some years used Champetier de Ribes' bag, not only in cases of placenta prævia, but also in all cases where formerly Barnes's hydrostatic dilators had been used. In cases of placenta prævia the bag had been placed in the amniotic cavity only when the membranes had been ruptured. In cases where they had been intact care had been taken to avoid rupture. The presenting portion of the placenta had been detached by sweeping the finger round the lower zone, and then the bag had been passed into the uterus so as to lie below the membranes. Good results had been obtained by this method, which had much to be said in its favour. In so-called accidental hæmorrhage the membranes were ruptured because it was the quickest method known of securing uterine contraction, which stopped the hæmorrhage, whereas in the hæmorrhage from placenta prævia the principle of treatment was precisely the reverse—that is, instead of invoking uterine action it was endeavoured to avoid it and to dilate and deliver by artificial means, and only when the cervix was sufficiently dilated were the membranes ruptured. He considered that the chief danger was sepsis from the bag itself, which was difficult to get aseptic owing to its composition of indiarubber and the material used to render it waterproof.—Dr. H. R SPENCER said he had had considerable experience of placenta prævia and of the employment of Champetier de Ribes' bag, though he had not employed the bag in the treatment of placenta prævia, but usually for the induction of premature labour. That experience led him to agree with most of Dr. Blacker's conclusions, but he thought that some further points should be taken into account in order that discredit might not be brought upon this method of treatment by its adoption in unsuitable cases. In cases of complete placenta prævia he doubted whether it was advisable to use the bag unless an edge of the placenta could be separated; for the child in these cases almost always died, and it would generally be impossible so to control the bag during its introduction as to be sure that it did not push up the placenta instead of passing into the amnion, and that the hæmorrhage which it was intended to check was not increased by the treatment. Dr. Spencer called attention to the paper of Dr. Camille Juge, which had appeared since Dr. Blacker's paper was written, in which an account was given of 9 cases treated by the introduction of the bag into the amniotic cavity. Of these 9 cases, 3 mothers died and 6 children were born dead. These cases, added to those in the table, gave a maternal mortality of 13 per cent. and a fœtal mortality of at least 58 per cent. The bag often caused a great deal of pain, and in three of Dr. Juge's cases it produced syncope—a very grave condition in cases of this nature. It also often took a long time to induce labour, as long as twenty hours in 2 of the cases in the table, whereas he (Dr. Spencer) found that after version the labour was over in 16 out of 17 cases in three hours, and in the seventeenth case within five hours.—Dr. BLACKER, in reply, said that he was indebted to Dr. Herman, not only for the remarks he had made about his paper, but also for the fact that it was mainly on his recommendation that he had first employed this mode of treatment in placenta prævia. He thought introduction of the bag after rupture of the membranes was certainly superior to its introduction before, as the latter method was almost certain to be accompanied by an unnecessary and avoidable amount of hæmorrhage.

The following specimens were exhibited:—

Mr. TARGETT: Large Encysted Peritoneal Abscess simulating Ovarian Cyst.

Dr. DRUMMOND ROBINSON: Cystic Ovaries removed by Anterior Colpotomy.

Dr. LEWERS: (1) A Monster, apparently consisting of a somewhat spherical mass of flesh with one limb attached; (2) a Skiagraph of the Monster; and (3) a Uterus with Fibroids removed by Abdominal Hysterectomy.

Dr. EDEN: Incomplete Decidual Cast of the Uterus from a case in which there was no evidence of Extra-uterine Gestation.

Dr. BOTTOMLEY: (1) A Fœtal Monstrosity; and (2) a case of Fœtus Compressus.

Dr. DUNCAN: Further Specimens of Fibroid Tumours of the Uterus removed by the Intra-abdominal Method.

Dr. HERMAN: Specimen of Ectopic Pregnancy going nearly to Term in the Peritoneal Cavity, the placenta being attached to the top of the uterus.

ODONTOLOGICAL SOCIETY OF GREAT BRITAIN.

Microscopical Aspects of Certain Lesions induced by Dental Caries.

AN ordinary meeting of this society was held on April 5th, Mr. JOHN FAIRBANK being in the chair.

Mr. FAIRBANK referred to the death of Mr. Salter, and remarked that the council had sent a letter of condolence to the family in the name of the society.

Mr. HOPEWELL SMITH read a paper on the Microscopical

Aspects of Certain Lesions induced by Dental Caries. His paper dealt chiefly with the various calcareous formations met with in the pulp and on the walls of its cavity. He remarked that the formation of such masses was due not only to caries, but also to traumatism, senile changes, and obscure conditions, and suggested the following classification:—1. Calcareous degeneration of the pulp through changes in the pulp alone: (*a*) common, due to vascular changes in the pulp in association with caries; and (*b*) rare, due to idiopathic or constitutional changes—e.g., gout. 2. Secondary dentine in pulp cavity, through changes in the primary dentine and pulp: physiological, due to senile conditions of both permanent and long-retained deciduous teeth. 3. Adventitious dentine in the pulp cavity, through changes in the primary dentine and pulp, the result of caries. Mr. Hopewell Smith then referred to the fact that carious stimulation of the dentine was associated with marked cellular activity on the part of the pulp, and he discussed the question under three headings—namely, conditions associated with (*a*) superficial caries; (*b*) deep caries; and (*c*) penetrating caries. The conclusions arrived at were—(1) that nearly every degree of dentinal change is attended with hyperæmia and cell proliferation in the pulp tissues and, generally speaking, the formation of adventitious dentine; (2) that the latter may have its origin as a conversion or secretion of the dentogenetic cells, producing, on the one hand, the areolar, laminar, or hyaline varieties, when the formative cells alone happen to be concerned, and, on the other hand, the fibrillar or cellular forms when odontoblasts or connective tissue cells are by chance incorporated in the deposit; (3) that there are no proofs that the cells called odontoblasts take any part in the production of the matrix of the new dentines, the term being therefore a misnomer; and (4) that the new dentines by a system of extension from the affected areas may be just as much subjected to the peptonising action of the micro-organisms as the primary dentine of the tooth.—Mr. MUMMERY, Mr. STORER BENNETT, Mr. F. J. BENNETT, Mr. GOADBY, and Dr. PARE took part in the discussion, and Mr. HOPEWELL SMITH briefly replied.

LIVERPOOL MEDICAL INSTITUTION.

Intermittent Hemiplegia.—Tetanus.—Enucleation of Uterine Fibroids.—Operative Treatment of Injured and Painful Blind Eyes.

A MEETING of this society was held on April 8th, Mr. ROBERT JONES, Vice-President, being in the chair.

Dr. ALEXANDER DAVIDSON read notes of a case of a man, aged seventy-three years, who had Intermittent Attacks of Hemiplegia. The patient was taken into hospital on Jan. 18th at 6.30 P.M. suffering from left hemiplegia; two hours later he recovered power in the face and limbs. On the morning of Jan. 19th there was no paralysis in the arm or leg; at 12 mid-day paralysis returned; at 1.45 P.M. power was gradually recovered. On Jan. 20th paralysis returned and was permanent.—Dr. KENNAN referred to a case of a man with Complete Left Hemiplegia, which disappeared in a quarter of an hour, only to return half an hour later and become permanent.

Dr. CARTER related two cases of Tetanus in which he had used the tetanus antitoxin. The first case was that of a boy, aged fourteen years, in whom the symptoms of tetanus were well marked; he had a slight wound on the back of the hand. Antitoxin from the Institute of Preventive Medicine was injected on three occasions, the amount used being 10 c.c., and during this time no other medicine was used. As the patient became worse, having almost constant spasms, opisthotonos, and no sleep, chloral and gelsemium were given with marked relief to the symptoms, and the patient ultimately recovered. The second case was that of a man, aged twenty-six years, who was kicked by a horse on the finger and had marked symptoms of tetanus. An injection of 30 c.c. of antitoxin obtained from Paris was given and a mixture of chloral and gelsemium was also taken. The symptoms becoming worse, 24 c.c. of antitoxin were injected, but the spasms became continuous and the man died. Dr. Carter did not think that the antitoxin had produced any material effect in these cases.

Dr. ALEXANDER described a method of Transperitoneal Enucleation of Uterine Fibroids, which he advocated as a substitute in many cases for removal of the appendages and for partial hysterectomy or pan-hysterectomy. Its advantages were greater safety without any mutilation of the patient. The operation consists of a median laparotomy, a longitudinal incision in the uterus in the median line down to the fibroids, their enucleation through one opening, closure of the incision in the uterine wall by catgut sutures, packing of the cavity occupied by the fibroid for forty-eight hours with iodoform gauze, an end of the gauze being left out of the lower end of the abdominal wound, and temporary ventro-fixation of the uterus whilst the cavity is drained. He related six cases, all successful, the number of fibroids removed varying from one to twenty-six.—Professor WALLACE remarked that the operation was not of wide application or fitted for single tumours.—Mr. HAWKINS-AMBLER said that Dr. Alexander's operation appeared to be a good one.

Mr. BICKERTON read a paper on the Operative Treatment, Past and Present, of Injured and Painful Blind Eyes, giving an Historical Sketch of the old practice of Extirpation of the Globe. He alluded to the alternative methods of treatment—e.g., optic neurotomy and neurectomy—as procedures to be discarded, and strongly advocated the performance of Mules's operation in all suitable cases.—Mr. G. E. WALKER doubted if it was worth incurring the great suffering caused by the introduction of a foreign body into the eye in order to bring about a little improvement in the appearance and mobility of an artificial eye.

SHEFFIELD MEDICO-CHIRURGICAL SOCIETY.

Exhibition of Cases.—Surgical Treatment of Gall-stones.

A MEETING of this society was held on March 25th, the President, Mr. RECKLESS, being in the chair.

Mr. PYE-SMITH showed a case of Supposed Fracture-dislocation of the Cervical Spine between the third and fourth vertebræ without Paralysis. The patient, a man, aged twenty-six years, fell six feet, alighting on the top of the right side of the head, nine months ago. The head was in a flexed position and could not be fully extended. There was pain in the region supplied by the supra-clavicular nerves.

Mr. HERBERT HALLAM showed a boy with Mediastinal Growth.

Mr. CONNELL showed a specimen of Tumour growing through the Orbit and extending widely into the Cranial Cavity.

Dr. SORLEY read notes of a case of Abscess of the Liver.

Dr. SINCLAIR WHITE read a paper on the Surgical Treatment of Gall-stones, and presented a tabular statement of the cases—nine in number—he had operated on. Operations on the gall-bladder were best classified under two heads: (*a*) those of necessity, and (*b*) those of expediency. Among the former the most frequent causes were acute suppuration of the gall-bladder, complete obstruction of the common bile-duct from an impacted calculus, with permanent jaundice and suppurative cholangitis. Among the latter chronic distension of the gall-bladder and repeated severe attacks of biliary colic occurred. Cases of chronic distension were common, and should not be dealt with surgically unless the condition gave rise to discomfort or interfered with the health of the patient. When repeated and severe attacks of biliary colic were present an important point, and one that was commonly lost sight of, was whether gall-stones appeared in the fæces. Should these be found after each attack it was right to wait, in the reasonable hope that eventually a natural cure would result; on the other hand, their absence was an indication for cholecystotomy. The success attending the employment of Paul's tubes in intestinal surgery had induced Dr. White to extend their application to the gall-bladder. A glass tube three inches in length and a third of an inch in diameter, with a constriction at each end, was employed. One end was tied in the gall-bladder and the other connected by means of a rubber tube with a bottle for collecting bile. The parietal peritoneum was stitched around and to the peritoneal covering of the gall-bladder on the proximal side of the ligature. By this means the possibility of fouling the peritoneum was avoided. The first dressing was not disturbed for ten days, by which time the ligature had cut its way through the gall-bladder and the tube could be removed.

The device had not only abolished the necessity for frequent change of the dressings, but materially shortened the time required for the operation. In one case, that of a woman weighing sixteen stone, the abdominal fat was four inches thick, and it was impossible to bring the gall-bladder to the surface. The case was successfully dealt with by introducing a teacup into the abdomen and allowing the contents of the gall-bladder to fall into it. In another case, where there had been innumerable attacks of severe colic followed by jaundice, the gall-bladder was filled with biliary sand. It was out of the question to suppose that this could have produced blocking of the common duct, and the case goes to prove, observations to the contrary notwithstanding, that transient jaundice may be produced by catarrhal inflammation spreading from the gall-bladder to the common duct.—The PRESIDENT, Mr. LOCKWOOD, Mr. PYE-SMITH, Mr. CUFF, Mr. SNELL, Mr. CHEESEWEIGHT, Dr. RHODES, and Dr. ADDISON made remarks.

ROYAL ACADEMY OF MEDICINE IN IRELAND.

SECTION OF PATHOLOGY.

Infective Endocarditis.—Roentgen Photographs.—Locomotor Ataxy.

A MEETING of this section was held on March 26th, Sir CHRISTOPHER NIXON being in the chair.

Dr. M. A. BOYD described a case of Infective Endocarditis. The patient was a man, aged twenty-five years, who died, after an illness of three days' duration, marked by pyrexia, delirium, and petechial eruption. At the necropsy there were found miliary abscesses in the kidney and myocardium, and the mitral valve presented an area near the margin of one cusp devoid of endocardium and coated with recent fibrin. The blood was fluid. Sections made from the mitral valve showed extensive necrosis and the margin fringed with compact clusters of cocci. The capillaries of the myocardium were plugged with cocci and the kidney showed similar conditions. Cultures produced pyococcus aureus. The illness dated from severe exposure to wet and cold. The mode of entrance of the organisms was otherwise unexplained. There had been no disease of the middle ear and there was no indication at all in any organ of a primary seat of disease.—Dr. E. J. M'WEENEY said that on cultivation the staphylococcus aureus was obtained, and a plate cultivation showed the liquefying power of the organism upon gelatin. The organisms produced a pale yellow colour, and had evidently been circulating in the blood of the patient.

Dr. LANE JOYNT gave a lantern exhibition of a series of thirty-five X Ray Photographs illustrative of various pathological conditions and showing the extent and utility of this aid to medicine and surgery. Four cases of Colles' fracture were shown, of which three cases had fracture of the styloid process of the ulna. The bones of tuberculous patients when rendered visible by the x rays showed some difference from sound bone. The most noticeable feature was the homogeneous appearance of the ends of bones, such as the phalanges, with marked atrophy of the compact covering, and in some cases the shafts of the bones were seen to be in a similar condition. The bones as a whole were more transparent than sound bone, even in parts not showing the clinical signs of disease.

Dr. COLEMAN and Professor O'SULLIVAN described a case of Locomotor Ataxy. The patient was a man, aged forty-one years. He had never had syphilis, but had suffered much from exposure to wet and cold. His symptoms began two and a half years before his death with lightning pains in the legs, followed six months later by slowness in micturition and occasional incontinence of urine. Eighteen months before his death he had transient diplopia, stumbled in the dark, and felt unsteady on his legs; about the same time he noticed numbness of the fingers of his left hand. The unsteadiness in walking progressed for the next twelve months, at the end of which time he suffered from painful tenesmus and girdle sensation. On admission to hospital his symptoms were as follows: slightly ataxic gait; incoördination of movements of the arms; Romberg's sign well marked; tactile sensation deficient over the distribution of the left ulnar nerve, less so in the right hand; thermo-anæsthesia in the left arm and both legs, with slight analgesia and retarded transmission of painful sensations; Argyll-Robertson pupil; loss of knee-jerks and of plantar, cremasteric, and abdominal reflexes. The nutrition of the toe-nails and of the skin of the soles of the feet was much impaired. He had old-standing tuberculo-fibroid disease of both lungs, and he died five weeks after admission to hospital from disseminated pulmonary tuberculosis.—Professor O'SULLIVAN said that the post-mortem examination showed thickening and sclerosis of the aortic valves, cavities, fibroid changes, and bronchiectasis in the right lung and disseminated tubercles in the left. On microscopic examination the nerves of the cauda equina showed increase of endo-neurium and marked thickening of the inner coats of the arteries. The cord showed degeneration of the posterior columns, which could be traced from the lower coccygeal region, where the cord was two millimetres in diameter, to the medulla oblongata. The ventral field of the posterior columns was free from degeneration throughout. A narrow zone running along the median septum was free in the lower part of the cord. In the dorsal region the medullated fibres of Clark's column had entirely disappeared. The posterior roots outside the cord were markedly degenerated up to about the fifth dorsal segment; from this on to the second dorsal segment they were almost free, and the path of these undegenerated fibres in the cord formed a narrow strip, which could be traced along the outer margin of Goll's column to the medulla, where they ended in the nucleus cuneatus. Above the second dorsal segment the degeneration of the posterior roots recurred, and was most marked in the cervical enlargement. Their path in the cord was marked by a strip of degeneration lying outside the last mentioned and also passing to the nucleus cuneatus. Above the cervical enlargement the degeneration of the incoming roots suddenly ceased. The degeneration was most marked throughout on the left side. Two of the spinal ganglia which were examined showed slight proliferation of the layer of cells lining the spaces occupied by the ganglion cells.

Reviews and Notices of Books.

Ospa i Ospoprivicanié: Pamiati Jenner'a. (*Small-pox and Vaccination: To the Memory of Jenner.*) Vol. I. By Dr. V. O. HUBERT. St. Petersburg: The Russian National Health Society. 1896. Price 3 roubles.

FOR this handsome volume we have nothing but praise. Last year, it will be remembered, the Russian National Health Society organised an elaborate commemoration of the centenary of Jenner's great work in proving the value of vaccination as a preventive of small-pox. For various unforeseen reasons the commemoration was postponed, and was finally held just before the close of the year. A description of the memorial meeting and of the exhibition connected with it appeared in our columns at the time. The volume now under notice was prepared by the secretary of the society and issued on the day of the meeting. The second volume is in course of preparation. The work could scarcely have been put into more capable hands than those of Dr Hubert. The present volume contrives in the course of some 530 pages to give a complete history of small-pox and the methods of dealing with it from the very earliest historical times down to the beginning of the present century. In the earliest chapters we find a good account of small-pox, or of such scanty historical references to it as remain, in ancient Egypt, in China, in India, among the Hebrews, and later among the Arabians; and here is included a complete Russian transla, tion, the first ever published, of Rhazes's well-known essay "De Variolis et Morbillis." A history of small-pox in the middle ages, followed by a full account of the practice of small-pox inoculation, leads naturally to the epoch-making work of our truly great fellow countryman, who robbed small-pox finally and for ever of the terrors it possessed for our ancestors. The story of Jenner's experiments and the final triumph of his discovery is, or should be, well known to most educated people in all countries, but it bears the

re-telling, especially when such a wealth of detail and lavishness of illustration are added as in the case of the present Russian version. And here we must add a word of special praise for the illustrations throughout the volume. There are in all between 400 and 500 portraits, drawings, facsimiles of ancient manuscripts, title pages, and so forth, and they are most of them excellently reproduced. We say "most" advisedly, for it is a matter of regret that some of the portraits are not so pleasing as they might be. Dr. Hubert has succeeded in collecting between thirty and forty different portraits of Jenner[1] and large numbers of likenesses of other celebrities and authorities upon small-pox, but in transferring by one of the mechanical processes the lines of old prints to new, very highly glazed paper the result is not in all cases satisfactory. These are, however, small blemishes, and the remainder of the illustrations, some of which are in colours, are excellent. The reproductions of Jenner's drawings for his "Inquiry" are particularly good; they are almost indistinguishable from the originals. Not only the "Inquiry," but all the other productions of Jenner's pen, including his verses, are here printed in full, either in Russian translation or in the original English, or in both, and a full life of Jenner completes the chapters relating to the introduction of vaccination.

The chapters on Small-pox and on Inoculation and Vaccination in Russia are naturally among the fullest in the book, and contain a vast amount of curious and interesting information. We have only space to call attention to the curious popular pictures here reproduced. These were apparently issued by the Government or philanthropic societies early in the century and distributed among the peasants. They are mostly crude, but very unmistakeable, representations of the disastrous effects of small-pox and the beneficial effects of vaccination, and it must have been the dullest of intellects that failed to read the lesson they were meant to teach.

It is a matter of regret that this work is in a language so little known outside its own country as Russian. But in view of the great number of illustrations it contains, and of the fact that it is dedicated to the memory of Jenner and his work, there is no reason why it should not find a welcome place in the libraries of many English medical men.

A Handbook of the Diseases of the Eye and their Treatment. By HENRY R. SWANZY, A.M., M.B. Dub., F.R.C.S. Irel., Surgeon to the National Eye and Ear Infirmary. Sixth Edition. London: H. K. Lewis. Pp. 608, post 8vo. Price 12*s.* 6*d.*

WE are glad to welcome another edition of this excellent manual. The changes that are to be found in the present edition, considering that only two years have elapsed since the appearance of the last, are of course not extensive, and many pages are simply a reprint; but the author has devoted much attention to the ocular diseases that are associated with morbid conditions of the brain and has greatly improved and extended the arrangement given in previous editions. The following is the order in which he has described these affections: Ocular diseases and symptoms liable to accompany focal disease of the brain, which include, amongst others, hemianopsia, alexia, visual aphasia, dyslexia, amnestic colour-blindness and mind-blindness; ocular diseases and symptoms liable to accompany diffuse organic diseases of the brain, as sclerosis, meningitis, epilepsy, and chorea; ocular diseases and symptoms liable to accompany diseases and injuries of the spinal cord, as tabes dorsalis, myelitis, syringomyelia, myotoma congenitalis, and acute ascending paralysis; nervous amblyopia or asthenopia; and, lastly, various forms of amblyopia—such as scintillating scotoma, congenital and reflex amblyopia, and erythropsia. Mr. Swanzy's work contains in an appendix a very useful enumeration of the regulations in respect to vision which disqualify candidates for admission into the public services, and it is much to be desired that these rules should be placed before those who are interested in the education of the young before they have commenced their special studies.

[1] One portrait (that on p. 351, a seated figure in cocked-hat) is surely an error. It is, we believe, not a portrait of Dr. Jenner, but of Dr. James Sims, M.D., LL.D.

LIBRARY TABLE.

On the Plans of Modern Asylums for the Insane Poor. By JOHN SIBBALD, M.D. Edin., Commissioner in Lunacy for Scotland. Edinburgh: James Turner and Co. 1897.—In view of the expressed intention of the English Lunacy Commissioners to furnish reduced plans of proposed asylums, embodying the latest approved architectural arrangements, this paper, written by Dr. Sibbald for the information of the authorities of the recently constituted Edinburgh Lunacy District and since reprinted, appears very opportunely. The authorities on whom devolves the duty of making provision for the steadily increasing numbers of the registered insane will now have ample opportunity of studying the matured opinions of the heads of the central departments on the subject of modern asylum requirements. Dr. Sibbald has acted wisely in publishing his views; they breathe the spirit of progressive enlightenment which characterises, and has characterised, the administration of Scottish lunacy affairs. The author describes the gradual development which has taken place during the century in the care and treatment of the insane and in their environment. He gives a description of several asylums built at different periods and shows the progressive steps that have been made with regard to the housing of the insane poor. As illustrating the latest type of asylum in the British Isles he describes the Gartloch Asylum (City of Glasgow), which is built on the pavilion system; and he instances the Middlesex Asylum at Claybury and the West Riding Asylum at Menston as being, from certain points of view, among the most admirable of the newer asylums. The village system which has recently come into favour in Germany and the United States meets with his warmest approval, and he gives a lucid and interesting account of the Alt-Scherbitz Asylum near Halle in Prussia. This asylum is administered on the village system, and Dr. Sibbald regards it as the type of asylum that conforms in the highest manner to the most modern and the best idea of what an asylum ought to be. He states that it carries further than any other type the idea of making asylum arrangements similar to those of ordinary life, and every development in asylum construction which has stood the test of experience has been made in this direction. Altogether this is an instructive and readable paper, and should certainly accomplish the object for which it was written.

Transactions of the American Gynæcological Society. Vol. XXI., for the year 1896. Philadelphia: William J. Dornan.—The volume before us contains several interesting contributions. Among these may be particularly mentioned a paper on the Liability to Prosecution for Damages in Abdominal Surgery by Dr. Kirkley, and one by Dr. John Byrne on the Relative Merits of Total or Partial Hysterectomy for Cancer of the Cervix by Ordinary Methods and Supra-vaginal Excision by Galvano-cautery. Dr. Boldt contributes a paper on the Implantation of the Ureter into the Bladder by Abdominal Section for the Cure of Uretero-Vaginal Fistula. There is also a paper by Dr. Charles Noble on Suspensio-uteri, with Reference to its Influence on Pregnancy and Labour. The question of the best technique to be adopted in abdominal hysterectomy for fibroids is once more to the front in a valuable paper by Dr. Byford, entitled "Drainage of the Stump and Connective Tissue in Abdominal Hysterectomy

for Fibroids and Inflammatory Disease." The volume quite maintains the high standard of excellence reached by its predecessors.

Dental Materia Medica, Pharmacology, and Therapeutics. By CHARLES W. GLASSINGTON. London: J. & A. Churchill. 1896. Price 6*s*.—A good text-book dealing with dental materia medica has been sorely needed for some time, and although we can hardly state that Mr. Glassington's book comes up to our most sanguine expectations, nevertheless it must be regarded as a distinct advance on anything as yet published. There are some omissions and a few inaccuracies which will no doubt be remedied in a future edition and so increase the value of the book, which should be a welcome help to the dental student and practitioner.

JOURNALS AND REVIEWS.

Science Progress (April, 1897).—This issue provides abundant material for study and reflection and should suit a very wide range of readers. Perhaps the most widely interesting contribution is that by Professor Poulton (Oxford) on a Remarkable Anticipation of Modern Views on Evolution, in which the author draws attention to the very pregnant conclusions of "that great pioneer of modern anthropological and ethnological research James Cowles Pritchard" (born 1786) as bearing upon the views of the present day in regard to the transmission of acquired characters. These views, which were arrived at independently by Professor Weismann over half a century later, appear, strange to relate, to have passed unnoticed. Even Darwin must have overlooked all notice of the remarkable anticipations published in a second edition of Pritchard's work on "Researches into the Physical History of Mankind." The issue contains also some papers of interest to the physicist, chemist, botanist, and student of medicine, while a paper on "Wind Scorpions" contains a very interesting account of these curious but somewhat discomposing creatures. They occur in Arabia, and are described as looking like "a piece of thistledown driven before the wind," and possess somewhat remarkable anatomical characters. They have terrible jaws and exhibit in general very formidable powers.

Journal of Mental Science (April, 1897).—In the current number of this quarterly Dr. Julius Mickle continues his interesting observations on Atypical and Unusual Brain-forms in Relation to Mental States. Dr. J. F. Woods relates his personal experience of suggestion, with or without hypnosis, as a therapeutic agent in the treatment of mental and nervous diseases. He commenced experiments in 1892 with very decided scepticism as to the value of this method; but the results he has achieved in the course of five years have convinced him of its efficacy, and he affirms that, in certain disorders, no other mode of treatment can compare with it. Dr. C. Hubert Bond, in a paper of much clinical interest, throws considerable light upon the relationship of diabetes, including glycosuria, to insanity. In a vigorous article Dr. Mercier discusses the question of Medical Reticence, both as regards sane and insane patients. He formulates his views in no half-hearted manner, but goes straight to the point, and strenuously upholds the sacredness and inviolability of professional secrecy. Duty to the patient, he says, should be the first and paramount consideration. He deplores the apathy and silence displayed by the great medical corporations on the subject, and indulges in a free criticism of some of the evidence tendered during a recent celebrated trial. Dr. Mercier reviews in detail the various exceptions to the general rule which were brought forward at the time, and which aroused so much discussion. With regard to sane patients he will hear of no exceptions, and states that a medical man is not, under any circumstances, justified in revealing the confidence of a patient without the patient's consent. Respecting the communications of insane patients the circumstances are somewhat different, and he concludes that the information obtained from an insane patient may be revealed when, and only when, it is expedient for the welfare of the patient or for the public safety. The whole question will come up for discussion at the annual meeting of the Medico-Psychological Association, and should give rise to an animated and interesting debate.

The *Humanitarian* for April has an interesting article on "The Women of the Pit," by John Pendleton. The life of the woman who helps to supply our hearths with fuel is very different from what it was before the Act of 1842 prohibited female toil in mines, but the pit-brow lassie still exists and, notwithstanding the smallness of the pay, seems to love her calling. Says this writer: "Whether the Legislature will ultimately decide that the pit-brow lass must abandon her work, or whether her muscular help will be superseded by mechanical appliances remains to be seen; but her own verdict is emphatically in favour of the continuance of her industrial life. She prefers it to the enervating work of the cotton mill; in fact, she is so attached to the free, though toilsome, employment on the pit brow, that after she has listened to the love avowal of miner or weaver and entered into the bonds of matrimony she is loth to leave her old career, and if her husband has no objection sometimes resumes her toil on the pit brow."

The April issue of *Knowledge* contains a brief summary of the progress of Chemistry and the Chemical Arts during the Queen's reign by Professor Thorpe, LL.D., F.R.S. This is the contribution for the month to the serial articles dealing with the science of the Queen's reign. He concludes with the pessimistic opinion that, "so far as can be seen, there is no immediate hope that this country will be able to compete with Germany in the manufacture of those products which are the direct outcome of the application of the higher and more recondite branches of chemical science to industry, nor will there be even the prospective hope until our manufacturers as a body bring the spirit of science into their work and show a greater receptivity and a more widespread desire to turn the ever growing development of the science to practical account."

New Inventions.

CELLULOID CYLINDER DRESSING-BOX.

A CONVENIENT means of keeping surgical dressings in an aseptic condition and available for immediate use is sure to have a favourable reception, and most of the qualities requisite for this purpose seem to be combined in a receptacle which has been devised by Messrs. Reynolds and Branson of Leeds. This article is in the form of a tall cylinder, which being made of celluloid is transparent, light, and neat in appearance; moreover it is not liable to be affected by antiseptics nor is it easily broken. The cover of the cylinder is an "air filter," a shallow circular dish, also of celluloid, fitting tightly into the upper part of the cylinder, and filled with cotton wool; the lid and the bottom of this dish are perforated, so that after the cylinder is closed air cannot enter without passing through the cotton wool. The cylinders are meant to be carried in an instrument bag; they are made in two sizes, one being 9 in. deep and 3 in. in diameter and the other 7 in. deep and 2½ in. in diameter.

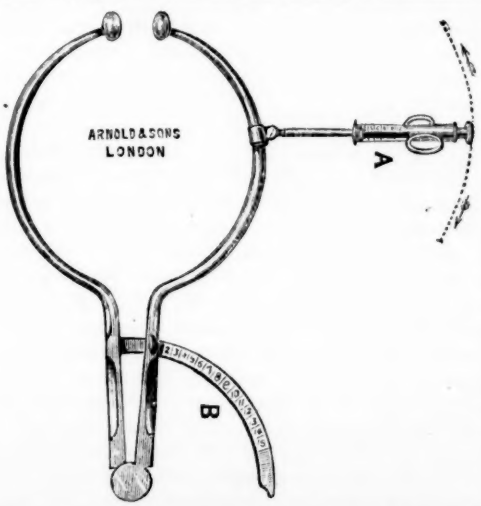
KNIFE FOR SLITTING OPEN THE TONSILS IN CASES OF LACUNAR TONSILLITIS.

IF we carefully examine enlarged or apparently normal tonsils we find in many cases deep crypts or lacunæ. These crypts frequently contain masses of grey caseous matter, and under the microscope large numbers of various kinds of micro-organisms are seen—often the tubercle bacillus, leptothrix, pneumococcus, Loeffler's bacillus, &c. These organisms frequently cause local or general infection. Most cases of recurrent sore-throat, drain-throat, or even of gouty throat, and many cases of enlarged cervical or bronchial glands, are due to infection which is contained in the crypts of the tonsils. The germ of rheumatic fever is believed by some authors to enter the lymphatics through the tonsils. In many cases of apparently normal tonsils we find quantities of tubercle bacilli in the crypts. In treating cases of diseased tonsils we try to destroy or obliterate the crypts in the tonsils, and thus prevent the accumulation of caseous matter and micro-organisms there. If the tonsils are large, we remove them by the guillotine, the snare, or the knife. If they are small, we try to obliterate the crypts or lacunæ by the galvano-cautery, by caustic, by sharp forceps, or by slitting them open with a knife. The last named is the least painful and most efficacious method. I have had a knife made by Messrs. Down Bros., St. Thomas-street, Borough, in the shape of a strabismus hook with a cutting edge. This is introduced into the crypts and drawn downwards or upwards, thus slitting open the tonsils. The crypts are thus converted into open fissures, and any subsequent accumulation of caseous matter, or of germs, &c., is prevented. The tonsils are then painted with 1 in 1000 perchloride of mercury solution for a few days. From one to three operations on each tonsil generally suffice. At some future time I hope to enter more fully into the methods of infection and the various diseases which can be caused by infection through the tonsils.

ADOLPH BRONNER, M.D.,
Surgeon Bradford Eye and Ear Hospital, Laryngologist Bradford Infirmary.

SPRING PRESSURE GAUGE CALIPERS.

THE illustration shows a pair of calipers made at my suggestion by Messrs. Arnold and Sons, 31, West Smithfield,



and presents an innovation at A, the use of which, though difficult to convey in writing, has, I know from trial, met a distinct want. It may be said that calipers might with advantage be more widely adopted in surgery as a diagnostic aid; for instance, not only in fractures and dislocations and joint diseases, but in some cases of abdominal and pelvic tumours (in the latter instance one limb of the instrument being inserted into the rectum or vagina). Yet my reason for calling attention to the present instrument lies beyond this. I presume others have, as I have, met with abdominal cases, especially in the obese, in which an accurate means of determining the different degrees of resistance to pressure as a diagnostic aid would be desirable, let the locality be the flank, over the cæcum, or elsewhere. Not infrequently, indeed, one is puzzled to know if one part is more resistant than a corresponding part. The instrument I submit will meet this want. If, for instance, it takes in one locality a pressure of 6 lb. of the spring A (note scale) to approximate the limbs so as to register six inches on the scale B, whilst at another locality it takes a pressure of 3 lb. only, then of course the former locality will have a resistance—and a diseased one—of 3 lb. greater than the latter. I hope, therefore, this aid alone may be an apology for another new instrument.

JAMES MACMUNN, L.R.C.P. & S. Irel., L.R.C.P. Lond.
Finsbury-pavement, E.C.

ROYAL COLLEGE OF PHYSICIANS OF LONDON.

ELECTION OF PRESIDENT.

THE annual meeting of the Fellows of the Royal College of Physicians of London for the election of President took place on Monday last. Dr. Wilks, in laying down his office gave an address, in which he first dealt with the question of professional secrecy, then reviewed the work of the College during the past year, and finally gave brief obituary notices of the deceased Fellows, the list comprising Sir J. Russell Reynolds, Sir G. Johnson, Dr. G. Harley, Dr. Langdon Down, Dr. W. Cholmeley, Sir B. W. Richardson, Dr. E. Ballard, Dr. C. H. Ralfe, Dr. G. Child, Dr. W. Wilson, Dr. Parry McConnell, Sir Thomas Logan, Dr. C. P. Blake, and Dr. H. Fearnside. At the close of the address a vote of thanks was passed to the President on the motion of Sir Alfred Garrod. The ballot was then taken, when Dr. Wilks received 79 votes; Sir W. Broadbent, 4; Sir R. Douglas Powell, 2; Sir W. Roberts, 1; and Dr. Church, 1. Dr. Wilks was then inducted into office by the Senior Censor (Dr. Church), and briefly thanked the Fellows for having elected him to a second term.

On the motion of the President it was resolved to present a loyal address of congratulation to the Queen on the completion of the sixtieth year of Her Majesty's reign.

Permission was granted to Dr. Hale White to deliver the Croonian Lectures in the Examination Hall, the subject of the lectures being the Means by which the Temperature of the Body is Maintained in Health and Disease.

In response to an invitation from the authorities of the International Medical Congress the President nominated Sir Dyce Duckworth and Dr. Lauder Brunton as delegates of the College to the Congress to be held at Moscow in August next.

A fine portrait of Sir Henry Halford, Bart., President of the College, 1820–44, by Sir Thomas Lawrence, was on view, it having been bequeathed to the College by his grandson, the late Sir Henry Halford.

SOCIETY FOR THE STUDY OF INEBRIETY.—The annual meeting of this society was held on the 8th inst., the President, Dr. Norman Kerr, being in the chair.—Dr. C. R. Drysdale read a paper giving the Results of Experiences of the Successful Treatment of Disease Without Alcohol, a conclusion which Dr. David Walsh thought might be attributable to other factors.—Dr. Kerr protested against the common accusation launched against the medical profession that their prescriptions were "one of the chief causes of drunkenness," he having found that less than ½ per cent. of his cases of inebriety had originated in "doctors' orders."—Dr. Morton, Mr. Riley, and the President discussed a paper by Mr. Cherrill, all concurring in the view that acquired characteristics may be transmitted.

THE LANCET.

LONDON: SATURDAY, APRIL 17, 1897.

As the date of the day appointed to be for ever memorable comes near public interest in the scheme of the PRINCE OF WALES'S Hospital Fund grows deeper and deeper; and it is of a twofold character. There is interest as to the amount of the Fund that is to signalise so great an event, and there is almost equal interest in the principles on which it is to be used and distributed. It is impossible as yet to form any precise conception as to the amount of the Fund. It is gratifying to see day after day that it continues to draw large sums and small sums from all sorts and conditions of men. Hospitals have never received subscriptions from so many individuals as those from whom they will have received contributions by the end of this year. This—probably even more than the sum raised—will be the glory and the distinction of the PRINCE'S scheme. HER MAJESTY appeals with a commanding effect to all her people, especially for any object in which the element of suffering or of human sympathy is involved; and she does so all the more effectually through her illustrious son, who has the same strong human sympathies which have been such a powerful factor in HER MAJESTY'S character.

We are not of the number of those who think that the main support of hospitals should come from the poor, or even from those of moderate means. Such classes do a far more creditable thing when they make self-reliant provision for their own ordinary medical wants and come to terms with a medical man of their own neighbourhood, either through the medium of a club or—better still—by private understanding on respectful and self-respecting terms. Such ailments of the mass of the people above the ranks of pauperism have no claim to hospital treatment. It is scarcely reasonable, therefore, to expect much in the way of contribution to hospitals from the classes in question. The hospital is properly the gift of the rich to the poor—of the man who is able in his own comfortable home to provide medical and nursing skill for himself and has enough and to spare to provide the extra medical and surgical skill, with corresponding nursing, which his poor neighbour requires in the emergencies of life when overtaken by grave accident or disease. One good likely to be effected by the PRINCE'S scheme is the bringing into the line of hospital supporters thousands with ample means who have hitherto not contributed—rather, perhaps, from want of thought than from want of heart. It is one of the mysteries in connexion with the support that is extended to hospitals that it is at present given by so few. It is an insoluble puzzle that thousands of well-to-do people should every day of their lives pass hospitals to which they never contribute a farthing, and yet never seem either to sleep or to dine the worse for their neglect. The lists which we see daily and the general sentiment which has been stimulated by the PRINCE'S action lead us to hope that a permanent blow has been struck at this indifference, and that consequently the hospitals of London, in reasonable numbers, and attempting to deal only with fit cases, will henceforth be less straitened in their endeavours to meet the really urgent cases of the classes for whom they were originally intended. If the rich—if even the comfortable men—of the metropolis would do what GUY did 160 years ago, the question of impecuniosity of hospitals would disappear; an efficient central authority would prevent the further multiplication of rival, and particularly of special, institutions; and the one care of administrators would be to accommodate fit cases and to exclude the unfit.

The administration of the Fund and the uses to which it is to be applied give us, we confess, more concern than the amount of it. It would seem from the successive circulars that emanate from the Council of the Fund, and from the somewhat vague terms in which the future form and use of the Fund are spoken of, as if these were still matters for further consideration. There is some wisdom in this vagueness. It gives time to study the trend of public opinion and the real questions that are at stake in any movement for helping voluntary hospitals and placing them in an unassailable position in public opinion. There are two or three principles which doubtless His Royal Highness and his colleagues will bear in mind with advantage. The first of these is to do nothing in promoting their own most popular Fund to damage the existing agencies by which hospitals are supported. It would be a poor effect of the Fund to in any way damage permanently the Hospital Sunday or Saturday Fund. The former especially is an institution which has existed for a quarter of a century and has raised a very large sum of money. It annually appeals to the charity of a number of those who do not more directly contribute to hospitals; and, while it might do much more, it has already done much to improve hospital administration. It should be recognised as a powerful and permanent agent for stimulating hospital charity and wisely supervising its administration. Still less would the PRINCE desire to interfere with the ordinary subscriptions of those whose steady benevolence has been the reliance of hospital treasurers in the past. We have heard whispers of diversion of funds from their ordinary channels into this magnificent and extraordinary channel of 1897. This, of course, is no gain at all to the cause which we all have at heart, and is a poor compliment to the QUEEN and His Royal Highness. It is merely saving with one hand what is given with another—it is robbing Peter to pay Paul. Finally, it would be well, and would powerfully contribute to the success of the Commemoration Fund, if it could be confined and concentrated in respect of the duration of the appeal. The continuation of it into future years will certainly tend to detract from its success and its brilliance as a Commemoration Fund, and to compete seriously with established agencies. Its success is evidently part of the *annus mirabilis* of 1897, and should not be imperilled by having to rely on competition with common methods of appeal and advertisement in ordinary years. We make these observations in sincere sympathy with the general object of the PRINCE'S scheme, and fervently hope that when

by its aid the hospitals are freed from the ever-pressing load of debt they will be once more at liberty to pursue their merciful work of relieving the sick and suffering without the temptation, which now too frequently arises, of distributing that relief with too lavish a hand.

THE advertisements and announcements having reference to the QUEEN'S Commemoration in June which meet the eye on every side should serve as a warning that the influx of visitors to London at the time of the festival is likely to be unprecedented. It is impossible to find data for a reliable estimation of the extra visitors which London is to expect, but the million and a half which is freely spoken of does not strike us as being in any way impossible.

How many persons can find accommodation to see the procession? The route is six miles in length, and standing shoulder to shoulder and allowing eighteen inches for each person it would take 15,120 persons to reach the length of the route. Doubling this we get 30,000 as the number for one line on each side for a length of six miles. In order that 1,500,000 spectators may view the procession there must be fifty rows of 15,000 on both sides of the route. It seems scarcely possible that accommodation can be found for such a huge concourse, but that many will have to be content with the enchantment of very distant views, and doubtless London will recall the Rome of CÆSAR, as imagined by our ever-living poet:—

> "Many a time and oft
> Have you climbed up to walls and battlements,
> To towers and windows, yea, to chimney-tops,
> Your infants in your arms, and there have sat
> The livelong day, with patient expectation,
> To see great Pompey pass the streets of Rome."

Few are aware of the enormous elasticity of London and the constant variation in the number of its inhabitants which is constantly going on. The dwellers and workers in the City are ten times as numerous at high noon as they are at midnight, and it is estimated that over a million persons enter and leave the City daily on business of one kind or another. What is true of the "City" proper is also true of central London generally, so that it may be assumed that the machinery now existing for the transport of people is quite adequate for the Jubilee. Ordinary business will be necessarily set aside to a great extent along the line of procession for at least three days previously, and as the Commemoration day is to be a holiday many who would ordinarily visit the City will stop away. After making every allowance, however, there can be no doubt that for two or three days at least London will be choke full, and we are bound to ask whether the over-crowding which will necessarily obtain is fraught with any danger to the public health.

Doubtless, as always must be the case, the ends of some few persons who are "ripe to depart" will be accelerated by the excitement and extra exertion, and it is equally not to be doubted that an average number of casualties will take place, and that some will be made ill by feasting "not wisely, but too well." Beyond this we are inclined to think that the festivities, with all the overcrowding they entail, will not appreciably affect the death-rate. Of all causes which tend to produce a high death-rate overcrowding is by far the most potent, but the ill-effects of it are seldom produced acutely, and it must be remembered that over-crowding in the open air is far less dangerous than over-crowding within four walls and under a common roof.

To be shut up for some hours in a crowded room with a case of infective disease is doubtless very dangerous, and our readers do not need to be reminded of the instances of the infection of judges, counsel, jury, and spectators by prisoners with gaol fever, or of the spread of infant maladies by means of indoor "treats" of various kinds.

The QUEEN'S Commemoration will be unique in the fact that all ceremonial is to be out of doors, and HER MAJESTY deserves the thanks of her subjects for this novel departure from customs which are more honoured in the breach than in the observance. The QUEEN has always manifested what may be called a "living faith" in the value of fresh air. HER MAJESTY has a wholesome horror of close and stuffy rooms, and it is well known that in the summer HER MAJESTY'S breakfast, luncheon, and tea are often served out of doors, and dwellers on the Dee side are aware that no ordinary weather (be it never so "saft" or even snowy) will deprive them of the pleasure of seeing their Sovereign in the well-known wagonette with grey cobs. It is largely owing to this fact that HER MAJESTY'S seventy-eight years sit so lightly upon her, and HER MAJESTY'S example, if loyally followed by her subjects, would have an incalculable influence for good upon the public health.

The difference in the susceptibility of individuals to the effects of foul air is very remarkable. There have been judges, and many, who have lived to a vigorous old age, and have continued to deliver the clearest judgments in the thickest of atmospheres, and who have remained in happy ignorance as to what is meant by foul air. On the other hand, there are many persons who cannot spend an hour or two in a crowded theatre or a crowded church without suffering from subsequent headache or malaise, or without "catching cold," as the inevitable consequence of their imprudence. HER MAJESTY has always manifested considerable intolerance of the atmosphere of crowded places, and it has been one of the penalties of her high position and popularity that every place which she honours with her presence has been "crammed to suffocation." Those who remember the intolerable heat and stuffiness of St. Paul's Cathedral at the Thanksgiving Service of 1872 or of Westminster Abbey at the Jubilee of 1887 will be thankful that in commemorating the sixtieth year of her reign our venerable Sovereign is to be saved from any similar trying ordeal.

AMONG the principal questions likely to engage the early attention of the General Medical Council at its meeting in May will doubtless be the judgment of the Lords of HER MAJESTY'S Most Honourable Privy Council on the subject of the refusal of the General Medical Council at its meeting in November last to accede to the application of the Apothecaries' Hall of Ireland to appoint surgical and, if it pleased, medical examiners also. Our readers will remember that on the first occasion, in 1896, when this subject was before their Lordships after the first refusal of the General Medical Council to assist the Apothecaries' Hall to maintain a position as a licensing body, they advised that the Hall should again approach the Council, asking them

to re-consider their attitude and to appoint examiners, not only in surgery, but also in medicine. This suggestion was accepted most willingly by the Hall, and in their next application to the Council for assistant examiners in surgery, while suggesting two gentlemen as examiners in medicine, they expressed their willingness to substitute any other examiners the Council might prefer. The Council in June last, though influenced by four or five unsatisfactory reports of successive inspections and visitations of the examinations of the Hall, was still unprepared to go the length of a direct refusal to appoint the examiners asked for, and, on the motion of Sir WILLIAM TURNER, directed communications to be made to the Royal College of Surgeons in Ireland and the Apothecaries' Hall of Ireland asking them to re-consider their respective positions with a view to a second combination between them such as should maintain an efficient standard of examination. But this well-meant device did not succeed. The Royal College of Surgeons in Ireland declined to enter again upon a conjoint scheme with the Hall; and when the Hall in November last, acting on the advice of the Lords of the Privy Council, asked the General Medical Council to appoint examiners, the Council by a vote of 23 against 2 (the proposer and seconder only) declined. The motion declining to make the appointments was proposed by Dr. MACALISTER and seconded by Mr. TEALE. Dr. MACALISTER in his speech[1] argued that it was so unlikely that the Council would be able to supervise and control the examination effectually after appointing surgical examiners that it would be better to leave the responsibility of such appointments with the Privy Council than for the General Medical Council to accept it. This view was adopted by the large majority of the Council which we have named, but the Privy Council has taken a different view of the question. Their Lordships have notified that, having heard counsel on both sides, their opinion is "that occasion has arisen for the General (Medical) Council to appoint assistant examiners in surgery under the Medical Act, 1886, for the purpose of qualifying examinations to be held by the Apothecaries' Hall of Ireland; and accordingly, in pursuance of the Provisions of Section 19 of the Medical Act of 1886, the General (Medical) Council is directed to appoint such examiners."

This episode in medical history is one upon which it is permissible to dwell for a few moments, and this we do with due respect to the Lords of the Privy Council before whom the matter was laid—viz., the Lord President (the Duke of DEVONSHIRE), Lord MACNAGHTEN, Lord JAMES OF HEREFORD, and Lord RATHMORE—although we are not prepared to find their judgment beyond criticism. We have often pointed out that in the last resort the Privy Council is the authority in law with which the General Medical Council has to reckon, and it is not a little creditable to the General Medical Council and the various medical bodies over whom it has jurisdiction that the Council has administered the Medical Acts for forty years without having come into collision with the Privy Council. There is no evidence now of any want of mutual respect between these two bodies. The opposite conclusion which has been reached by them only expresses their natural difference of standpoint, and time will show whether this difference is one affecting the mere order of procedure or whether it is of deep and serious import. For it would be a serious thing in the eyes of the medical profession if, after patient and costly inspections and visitations by the General Medical Council, an unneeded medical corporation had by the order of the Privy Council to be preserved and to be allowed to compete with other examining boards after its *raison d'être* had ceased in the estimation of the General Medical Council. This result does not necessarily follow from the action of their Lordships in this case, but it seems to be the immediate consequence of their judgment. They recite Section 5 and Section 19 of the Medical Act of 1886 as if the General Medical Council had no discretion in the matter but to appoint examiners for a body in the position of the Apothecaries' Hall of Ireland, and as if they themselves had as little discretion to abstain from notifying the same to the General Medical Council. They seem to have decided that, in the event of the Council not complying with their directions and notifications no responsibility with regard to the appointments rests with themselves. That four gentlemen, however eminent in statesmanship or law, should have such power over a medical body of thirty members, representing the profession and all its corporations, the universities, and the Crown, is indeed a serious fact, and one which will not readily be understood by the public or the medical profession. The General Medical Council, as a non-legal body, naturally sees in the words "if they see fit" a certain discretion as to its function of appointing additional examiners. But the judgment of their Lordships seems to abolish all discretion in the matter. It is time, in the interest of common sense, that either these words should cease to be used in the Acts of Parliament or that they should be allowed their natural meaning.

Meanwhile it seems to us to be a very regrettable matter that the General Medical Council, which may surely at least be credited with a desire to act in this respect with a due regard to the best interests of both the medical profession and the public, should have received such a rebuff at the hands of the Privy Council.

[1] THE LANCET, Nov. 28th, 1896.

Annotations.

"Ne quid nimis."

THE PORT OF LONDON.

THE half-yearly report of Dr. Collingridge, medical officer of health for the Port of London, shows that 14,422 vessels were visited and inspected in the Port of London during the half-year ending Dec. 31st last—a considerable increase on the number for any previous half-year. Of the number stated 82·4 per cent. were British and 9·7 per cent. Scandinavian. Forty-eight sick seamen were referred to hospital. Attention is drawn to a sanitary defect frequently met with in these days of iron and steel ships—namely, the condensation of moisture which occurs on the under side of decks over forecastles, the result being that this moisture runs down on to the bunks below, and it is no uncommon thing to find men's bedding and clothes saturated from this cause, a serious matter as affecting the

health of seamen who are well known to suffer beyond the average from rheumatism and its train of concomitant diseases. A coating of granulated cork on the iron is good as a palliative procedure, but the only effectual method of dealing with the nuisance is to have a wooden deck over the iron and the under surface completely lined with the same material close up to the deck, all beams being encased. The instructions to surveyors last issued by the Board of Trade prohibited the placing of bunks under an unsheathed deck, but the operation of this section was postponed. Another matter in the port which calls for attention is the condition of the cabins of lighters and other "dumb" craft. The Merchant Shipping Act and Canal Boats Act provide for the comfort of persons living in craft registered under these Acts, but in the case of lighters, though the cabins cannot strictly be considered as dwellings, they have to serve as temporary habitations, often for considerable periods. The Port Sanitary Authority is now, since the Public Health Act, 1896, practically the health authority for the port, and its medical officers have discretionary powers as to the detention of vessels in reference to the diseases named. During the half-year eighty-eight cases of infectious disease came under the notice of the authority's officers. Two cases of plague, the diagnosis being verified by bacteriological examination, were admitted into the Seamen's Hospital in 1896. The first case was that of a native of Bombay admitted on Sept. 19th, who had apparently been ill for twelve days or less, and who died five hours after admission. The other case was that of a patient ill for four days, who was admitted on Sept. 29th and who died on Oct. 3rd. Careful instructions were given to the boarding medical officers as to dealing with suspected cases found on vessels. The order of the Local Government Board requiring in certain circumstances the disinfection of rags imported from abroad has been rescinded. Details of nuisances dealt with are given, and in consequence of the continuance of the practice of pumping filthy bilge-water into the docks and river a special notice has been published as a warning. Particulars are given of some cases of overcrowding, and especially insanitary condition, found on some foreign vessels. At the hospital of the authority 29 patients were treated during the half-year, of whom only 4 died; the average number of patients under treatment daily was 3 6, and the average number of days spent in hospital by each patient was 21·7. A considerable number of seizures of unsound food was made during the six months, comprising 2758 carcases and 1469 pieces of mutton and lamb, 14 quarters and 30 pieces of beef, 2 tons of bacon and hams, 18 casks of horse beef, 496 tins of meat, 45 cases of salmon, 2909 lobsters in jelly, 41 cases of desiccated soup, 4270 tins and 74 cases of rabbits, 193 cases of condensed milk, 7100 crates of bananas, 5000 boxes of oranges, 146 packages of fruit and vegetables, sundry small parcels consisting of apricots, bacon, brawn, cheese, chestnuts, confectionery, currants, hams, kidneys, olives, ox tails, peaches, persimmons, pickles, pines, suet, sultanas, tomatoes, tongues, tripe, &c. An additional new launch has been added to the service of the Port Sanitary Authority, whereby the duties of inspection have been greatly facilitated, though it has only been at work since September. The number of canal boats inspected was 668, a slight increase; 114 boats were found to be in some way infringing the regulations. The number of women and children carried shows a slight increase for the past two years, being to some extent due to the great frost of 1895 which, paralysing the canal traffic as it did, compelled many boatmen to break up their homes on shore and take their families afloat — a serious matter, as canal boats are not a desirable habitation from either a moral, sanitary, or educational view for women and children. A new order respecting cattle ships was issued on Dec. 8th last, which makes several concessions to ship-owners for which they have striven for some years. Reference is made to the report by the medical officer of the Local Government Board on oyster culture in relation to disease, several oyster lays being within the jurisdiction of the Port Sanitary Authority, though it does not appear that a sanitary authority has any definite power to act in the matter of oysters at these places. The subject is considered an important one, and a strong case exists for proper systematic supervision.

ROYAL COMMISSION ON TUBERCULOSIS.

THIS Commission sat at 7, Whitehall-place on April 8th and 9th, Sir Herbert Maxwell, Bart., M.P., being in the chair. The other Commissioners present were Dr. R. Thorne Thorne, C.B., F.R.S., Professor G. T. Brown, C.B., Mr. Shirley F. Murphy, Mr. T. Cooke-Trench, and Mr. J. Speir, Evidence was heard from the following gentlemen:—Dr. Smyth, medical officer of Naas dispensary district, as to the subject of tuberculosis in the small towns and rural districts of Ireland; Mr. Thomas Nuttall, representing the Central and Associated Chamber of Agriculture, as to his experience of the prevalence of the disease in the district of Leicestershire; Mr. J. Lang and Mr. Scarlett, of the Paisley United Fleshers' Society, as to the action of the local authority in condemning carcases affected with tuberculosis, and the system of insurance adopted by the butchers to protect themselves from the losses sustained in consequence of such action; and Mr. J. Bell, President of the Carlisle and District Butchers' and Insurance Association, as to similar action in Carlisle.

MEDICAL FEES IN AMERICA.

MEDICAL fees in America, taken all round, are higher than those in England. It has been computed that there are two or three consultants in New York who make £20,000 a year, five or six who make £10,000, and several who make £5000 and upwards. Locality has, of course, a great deal to do with the rate of fees, for a man who settles in the country naturally does not expect to have so large an income as one who takes a house in a rising town or in a large city. Fees in New York are somewhat higher than elsewhere in America. As a rule, in that city a family attendant receives an amount varying from $2 to $5—i.e., from 8*s.* to £1—per visit, and the average fee of those whose practice lies wholly among the wealthy is from $5 to $10. Consultants' fees range from $10 to $25. Visits at a distance from home are at the rate of from $10 to $20 per hour, not including travelling expenses, and a fee of $25 for the consultation itself. Fees for surgical operations run from $100 into several thousands. In the lower district of New York a practitioner must be content with a fee of $1 (i.e., 4*s.*) for a home consultation and from $1 to $1.50 for a visit. In the other large towns of America the ordinary fee for advice is from $1 to $2, and never less than $0·50; for a visit the charge is from $1 to $5, and never less than $1. Midwifery fees vary from $10 to $50. The fact must also be borne in mind that in the States a medical man rarely does his own dispensing, and the druggist charges for making up the requisite medicine a sum of at least $0.50, so that in all cases advice and medicine will cost the patient at the lowest estimate $1. In many of the smaller towns a physician is glad to give advice at his house for $0.50 (i.e., 2*s.*) and to make a visit for $1. Such an institution as the cash practice, where advice and medicine may be had for 6*d.* or 4*d.*, is absolutely unknown in America, and it may be asserted without fear of contradiction that the average income of a medical man there is higher than in England. One drawback, however, is attached to the practice of medicine in the States which does not exist to the same extent in Great Britain, this being the greater difficulty

experienced by American physicians in collecting debts due to them, for practice is carried on almost wholly on the credit system and it often happens that a patient after consulting a specialist does not leave his fee on the table. Why fees in the States should be generally so much higher than in England is a matter somewhat difficult to comprehend. Less competition cannot be the cause, for in the States there is one medical man to every 500 persons, whereas in England there is only one to every 1500. The working classes in America receive larger wages than in Great Britain, and no doubt this partly accounts for the higher medical fees, but a still more potent reason is the fact that in America the members of the medical profession stand well together and are resolved to resist as vigorously as possible any attempts to lower the rate of fees.

COOKERY AND FOOD EXHIBITION.

THE Cookery and Food Exhibition, which is held annually under the auspices of the Universal Cookery and Food Association, instituted and promoted to extend a better knowledge of the various substances used as food and the best and most economical method of cooking, will be opened on Wednesday, May 12th, at the Niagara Hall, St. James's-park, London, S.W., and will remain open till the following Wednesday. The exhibits will be classified under the headings of Education in its connexion with Cookery; Plain or Household Cookery; Army, Navy, and Mercantile Marine Cookery; Artistic Cookery; Cookery Teachers' Competition; Artistic Confectionery, &c.; Bread and Pastry; and Provisions, &c. Various demonstrations and lectures will be given. This is the tenth exhibition of the kind that has been held, and we wish it every success. Bad cooking is answerable for some of the ills of the flesh, and to any efforts to improve what is almost a neglected art in this country, especially amongst the poor, we give our hearty support.

PHOTOGRAPHIC ENERGY OF THE LIGHT OF FIRE-FLIES

A VERY interesting investigation of the luminous and other radiations emitted by fire-flies has just been published in the ninth volume of the *Journal of the College of Science*, Imperial University, Tokyo, Japan. The author, Mr. H. Muraoka, who writes in German, is Professor of Physics at Kyoto. He mentions that the spectacle produced by the fire-flies about the middle of June is one of the sights of the place, and he states that the present inquiry was suggested to him by the resemblance of their light to that of fluorescent bodies, some of which have been shown by H. Becquerel to emit radiations possessing properties analogous to those of the Roentgen rays. The flies are most luminous from about 6 P.M. to 11 P.M. The experiments were made by placing a number of them, varying from 300 to upwards of 1000, in a small flat box in which they were confined under a net made of hemp ("deren Wegfliegen mit einem Hanfnetz verhindert wurde"). The box also contained a photographic dry plate, in contact with which were plates of various metals (copper, aluminium, zinc, and brass), all of similar thickness, sheets of cardboard, both entire and also with cruciform patterns cut out of them, being sometimes interposed between the sensitive plate and the metal and sometimes used alone with the sensitive plate. Thin wooden boards were also employed for the same purpose. The sensitive plate and the objects in contact with it were wrapped in several thicknesses of black paper and left in the box with the flies for two nights. The experiments were made in a photographic dark room, sunlight and artificial light being carefully excluded. The sensitive plates, though thus wrapped up, and additionally protected by metallic plates and layers of cardboard, gutta-percha, cloth, silk, &c., were always more or less blackened. Professor Muraoka makes frequent reference to the papers published in *Nature* in the early part of 1896 by Dr. John Macintyre of Glasgow and Mr. J. J. Thomson. His experiments led him to the following conclusions:—1. The light of the flies in its original state behaves like ordinary light. 2. The light contains rays which pass through cardboard, metal plates, &c., and possesses properties analogous to those of Roentgen rays or Becquerel's fluorescent rays. 3. When the photographic plate is covered with layers of cardboard it presents an appearance which calls to mind the permeability of iron to magnetic lines of force. 4. The properties of these "filtered" rays appear to be influenced by the materials through which they have passed, perhaps by the thickness of the materials. 5. The properties possessed by the radiations and specified under No. 2 are apparently non-existent, or at least undiscoverable until after "filtration." The Roentgen rays are similarly undiscoverable until after "filtration"—i.e., through the glass of the Crookes's tube—and "filtration" may, perhaps, afford a means of rendering the x rays homogeneous. 6. The "filtered" fire-fly rays undoubtedly admit of reflection. Refraction, interference, and polarisation could not be demonstrated, but Professor Muraoka is of opinion that they take place. 7. The "filtered" firefly rays seem to resemble Becquerel's fluorescent rays in possessing properties intermediate between the ultra-violet rays and the Roentgen rays. The volume of the *Journal of the College of Science* in which this article appears contains over 200 pages; all the other papers are in English, and are mostly chemical, except four, the subjects of which are electricity, magnetism, geology, and astronomy.

TRICUSPID STENOSIS.

TRICUSPID stenosis is a disease of some rarity. Dr. James B. Herrick, having found three cases in the post-mortem room not diagnosed during life, writes on the subject.[1] He has collected all the cases published since Leudet's thesis, which appeared in 1888 and gave a complete bibliography to that date. To the 117 cases (of which 114 had records of necropsies) furnished by Leudet the writer is able to add 40 with necropsies. He gives abstracts of most of these, and on the basis of the whole 154 cases constructs an account of the disease. But he has little to add to Leudet's conclusions, which must still be the foundation of future work. Tricuspid stenosis may be congenital, and then it is either the result of a develop mental defect or of intra-uterine endocarditis. It is usually accompanied by other abnormalities—pulmonary stenosis, defects in the inter-ventricular septum, patent foramen ovale and ductus Botalli. The symptoms are cyanosis, clubbed fingers, and diastolic and systolic murmurs. Few patients survive until twenty years of age. In the acquired form antecedent rheumatism occurred in 30 per cent; but there were also doubtful cases, so that for this and other reasons the relationship is understated by the writer. Leudet, indeed, estimated it at 50 per cent., which appears to be nearer the truth. The age at death of the greatest number affected with the acquired form was between thirty and forty years. As in mitral stenosis, the disease was more prevalent in females than males, the proportion being 114 to 32. The tricuspid leaflets are generally found adherent by their free borders. The opening may admit only one finger-tip or less. Naturally, with the stenosis there is regurgitation. The disease is rare as an isolated lesion; in Leudet's 114 cases this occurred in only 11. Mitral stenosis was by far the commonest concomitant (78 cases). Mitral and aortic stenosis occurred in 21 cases, and pulmonary stenosis in 3. The right auricle is usually enlarged, sometimes considerably, "like a

[1] Boston Medical and Surgical Journal, March 18th, 1897.

supplementary heart." Where the stenosis was marked there was usually a small right ventricle, and this in spite of the fact that there was also mitral stenosis. Commonly, however, the combined lesions produce general enlargement of the heart. The symptoms are those common to valvular disease. Dyspnœa may be extreme. Cyanosis is generally marked, with perhaps œdema. The pulse, from deficient supply of blood, is small. Presystolic venous pulse is generally seen, often with systolic from concomitant insufficiency. Percussion reveals an enlarged right heart, and commonly left also, from mitral or aortic disease. Dulness may commence as high as the second space to the right of the sternum, suggesting auricular enlargement. Thrills are at times present. The murmur is diastolic, heard best over the right fifth and sixth cartilages, but it is frequently inaudible. The diagnosis presents great difficulty; only 6 of the 114 cases were recognised during life. The disease may be suspected in a female who has mitral stenosis with a history of dyspnœa, palpitation, œdema with remissions, and cyanosis, especially if persistent. Right auricular enlargement is very suggestive. If, in addition, there is a presystolic or diastolic murmur heard best over the ensiform or right fifth and sixth cartilages, particularly if this differs from the mitral in character, or if there is an area between the two where none is heard, the diagnosis is reasonably certain. The prognosis in general is bad, but must depend on all the circumstances of the case. It should be remembered, however, that a patient may live to sixty-five years. The treatment is similar to that of heart disease in general.

A CHILD KILLED BY FERRETS.

AT Bromsgrove, on the 6th inst., an inquest was held on the body of Ernest Lewis, aged two years. On March 26th the deceased and four other children, whose ages ranged from five months to seven years, were left in bed, locked up in a house at Dodford, whilst the parents went to market. Two ferrets which were kept in the house broke loose, and getting upstairs attacked the sleeping children. The eldest boy repeatedly threw the animals downstairs, but as there was no door to the bedroom they returned. The boy Ernest sustained a number of severe bites, to which he succumbed. A large part of his mouth and nose were eaten away. The medical man stated that all the children except the eldest would be permanently marked. The jury blamed the father for not taking proper precautions to secure the animals. Such is the matter-of-fact account furnished by some of the daily papers of this gruesome tragedy. The sufferings of these unfortunate children both from physical pain and terror must have been intense and long continued. It is difficult to conceive anything more ghastly. It does not appear to be generally known how very ferocious these beasts are, especially when hungry. To the censure of the jury on the father we would add that the animals should not have been kept in the house at all. We trust the case will serve as a warning; but we fear it may not attain the publicity that it should.

THE SMOKE NUISANCE IN SHEFFIELD.

THE air of Sheffield is proverbially in a chronic state of murkiness, and the town suffers considerable reproach on this head. But in a most comprehensive report on the causes of prevention of smoke recently drawn up by Dr. Littlejohn, the medical officer of health, he very properly points out that in contrast with other towns Sheffield is seriously handicapped by the fact that it contains a much more closely packed smoke-producing area. The amount of coal consumed in Sheffield annually is about one and a quarter million tons, and this within an area of thirty square miles. In London in 1892 the amount consumed was the same, but the area of distribution is 235 square miles, so that were London factories brought into a square whose sides were three miles distant north, east, south, and west of Charing-cross, it may be assumed that the conditions of the metropolitan atmosphere would be much the same as that of Sheffield. The amount of sulphuric acid corresponding to the amount of sulphur in that quantity of coal would amount to 37,500 tons, so that in Sheffield, while the sulphuric acid deposited in the rain would amount to 1000 tons to the square mile, in London it would only be equal to 140 tons. In other words, London receives on the ground just as much sulphuric acid as Sheffield, but over a larger area and consequently more diluted. It is probable, however, that London is more favourably situated than is Sheffield for the removal of smoke. It is, no doubt, the continued prevalence of winds during the last few winters—and London has no barrier against the onset of winds in any direction—which has resulted in the notable absence of fogs in the metropolis of late. Dr. Littlejohn, we are glad to see, points out to the Sheffield Health Committee that much more may be done by efficient control and regulation towards mitigating the evil still further, and his report is a valuable contribution on the subject.

PARISH MORTUARIES.

WE have many times insisted upon the paramount necessity which exists, especially in thickly populated town parishes, for the erection of properly appointed mortuaries. To say nothing of the question of decency and reverence it is acknowledged by every one that the presence of a corpse in a small room, often less than eight feet square and inhabited day and night by several persons, is not conducive to health. A praiseworthy attempt is now being made by the vicar of the very poor parish of St. Augustine's, Stepney, to raise a fund for the erection of a decent and well-fitted mortuary for the reception of the bodies of those who die in his parish. That such is needed is obvious when it is remembered that the parish can be walked in its length in four minutes and across in two minutes, while the population is 7500. A sum of £915 has already been raised and £585 are required in addition. Donations may be sent to The Vicar, St. Augustine's, Stepney, E., and we cordially commend this scheme to the generosity of those who have any money to spare. It must be remembered that the mortuary will also serve for the needs of adjacent parishes which are quite as crowded as is St. Augustine's.

PLAGUE AT HONG-KONG IN 1896.

WE have received a copy of the Blue-book dealing with this epidemic. Plague is at all times an interesting disease, and is doubly so to us at the present juncture. The report is drawn up by Dr. Wilm, a staff surgeon in the Imperial German Navy, whose services were kindly placed at the disposal of the Colonial Government by the admiral in command of the German Asiatic Squadron. He was placed in charge of the Kennedy Town Hospital and the bacteriological laboratory which was established there in May, 1896. During his term of office he treated 300 cases of plague and examined the bodies of 867 persons who had died from the disease. In most of the cases there were no prodromata, the period of incubation was usually from three to six days, but in one instance apparently fifteen days. There was intense prostration and delirium with fever, the temperature ranging from 100 6° F. to 106° F., but a high or low temperature seemed to make no difference in the fatality. The fever lasted from six to ten days, rising from the third to the fifth day, and then gradually falling to normal; but later a secondary fever appeared, apparently

due to some septic absorption from buboes. Petechiæ—probably the "tckens" which Boghurst and other seventeenth century writers mention as of unfavourable import—only appeared in 3 per cent. of the cases, and these very severe ones. The mortality among hospital patients was 73 per cent., and among Europeans 50 per cent. Convalescence was very slow. From a series of bacteriological experiments Dr. Wilm concludes that infection is possible through the skin, but that this is uncommon; the most frequent mode of invasion is by the alimentary tract. The bacillus is very sensitive to heat, light, and fresh air, and plague, like typhus, would seem to be essentially a filth disease. The treatment employed was merely symptomatic, but Yersin's serum treatment as used by himself in Canton is said, if employed within the first three days, to have met with great success. Dr. Wilm gives a scheme of prophylactic measures, chiefly hygienic—strict cleanliness, destruction as far as may be of infected material, and special attention to the water-supply being the most important points. We have only given the barest outline of Dr. Wilm's researches, but the whole Blue-book is deserving of the most careful attention, and the thanks of everyone are due to Dr. Wilm, and also to his superiors for the use of his services. The report is translated by Dr. Maurice Eden Paul.

LORD LISTER AND HIS FORMER HOUSE SURGEONS AND DRESSERS.

NOT the least interesting of the many expressions of esteem and regard which have been offered to Lord Lister on his elevation to the peerage is the banquet which is being organised by those who have served under him in Glasgow, Edinburgh, and London as his house surgeons, clerks, and dressers, and who have therefore been intimately associated with him in the spread of his discoveries and the elaboration of his principles. The dinner will take place at the Café Royal, Regent-street, on Wednesday, May 26th. It will be presided over by Professor Joseph Coats, and will be limited to those who have served under Lord Lister as house surgeons, clerks, or dressers, as its intimate character is to be strictly preserved. Lord Lister entered on his duties at Glasgow in 1861 and at Edinburgh in 1869, so that considerable difficulty has been experienced in obtaining the names and addresses of his assistants in the early period of the thirty-two years during which he was a teacher of clinical surgery. We are asked to say that all who have filled any of the offices mentioned should communicate at once with the honorary secretary of the dinner committee, Dr. St. Clair Thomson, 28, Queen Anne-street, London, and should mention the year in which they held office, and it is hoped that this information will be given whether they are able to attend the dinner or not, as it is desired for sentimental reasons to draw up a correct list, in chronological order, of the gentlemen who have been privileged to assist practically in the development of antiseptic surgery.

THE FEEDING OF YOUNG CHILDREN.

ERRORS in the feeding and management of young children are responsible for much of the sickness, suffering, and mortality of early life, and while some parents who ought to know better are culpable of gross ineptitude in the care of their offspring, there are many among the poorer classes who are quite ignorant of the principles which should underlie the rearing of young children. The Sanitary Committee of Brighouse, Yorkshire, have had prepared by their medical officer, Dr. Meredith Young, a set of rules, based largely upon the Obstetrical Society's recommendations, printed on a card with a loop of tape attached for the purpose of hanging up for reference. It is proposed to distribute these rules by the agency of the local registrars of births and deaths. This is certainly a step in the right direction, and we should like to see its more general adoption; but if the information could be compressed, printed in larger type, and adapted more to the requirements of the very poor, the value of the plan would be increased. It is useless to tell a certain class of the population that children should sleep in large rooms, for the simple reason that the poor cannot afford to rent large rooms; and we doubt very much if this class of the community understands anything by being told that the infant's bath should be at a temperature of about 90° F. As warm as could be comfortably borne by the mother's elbow would be a far preferable direction. Apart, however, from these slight defects the card should certainly prove to be of use.

THE NEW BRITISH HOSPITAL AT CANNES.

A PROPOSAL was made some five years ago to erect a permanent British hospital at Cannes, and the building, if not already *un fait accompli*, will, we hope, be so shortly. On April 8th, the first stone of the new buildings was laid by His Royal Highness the Prince of Wales at Sunny Bank, in, as his Highness himself expressed it, "this charming Cannes—in this beautiful country." The temporary buildings which at present constitute a British hospital were opened at the end of 1893, since which time about 100 patients have been successfully treated. The new buildings, as Sir Sydney Waterlow stated in his address to the Prince of Wales, will provide ten beds for ordinary cases and five beds for contagious cases which will be completely isolated, and the whole will cost about 55,000 fr. Such an institution is much needed, and will no doubt be greatly appreciated by many.

THIOSINAMINE IN KELOID.

DR. RICHARD C. NEWTON[1] reports a case of keloid treated with hypodermic injections of thiosinamine. We are reminded that this drug, an allyl-sulpho-urea procured from the volatile oil of horseradish by the addition of ammonia, was originally used by Hebra as an absorbent of exudates in corneal opacities and in lupus, and later by Dr. Tonsey of New York in the treatment of keloid. The amount injected by Dr. Newton was from fifteen to twenty minims of a 10 per cent. solution. After repeated injections a diminution both in size and hardness of the keloids was observed. In another case of tight contraction of the skin and subcutaneous tissue after an extensive burn a marked increase in mobility with softening of the affected tissue followed the use of these injections. Recovery from a disease like keloid, we fear, is hardly to be expected under any method of treatment save excision, but something will have been gained if further experience of thiosinamine should confirm the results already claimed for it as an absorbent of scar tissues.

THE JENNER SOCIETY.

WE have before us the report of the executive committee of the Jenner Society for the year 1896, a society which was founded in Gloucestershire at the time that the city of Gloucester was being so severely visited by small-pox, the main object of the organisation being the dissemination of knowledge concerning vaccination, which was sadly wanted there. The society thus formed comprises many influential persons, and, thanks to the untiring energy and enthusiasm of its moving spirit, Dr. F. T. Bond, the honorary secretary, much useful work has been done during the first year of its existence. It was fitting that such a society should have its origin in the county where Jenner lived and worked, but we would fain hope that the good work thus

[1] New York Medical Journal, March 20th, 1897.

inaugurated may be extended by the inclusion of members from all parts of the kingdom. The report speaks in no uncertain tones upon the tactics and objects of the Anti-vaccination League, and declares that not to oppose "such an organised and aggressive conspiracy against the best interests of humanity would be an abnegation of duty." Yet it is plain that if such opposition is to be commensurate with the operations of the Antivaccination League it will be necessary to widely enlarge the scope and work of the society. If therefore the Jenner Memorial movement can only be devoted to the prosecution of research in the field in which Jenner was the pioneer, we would ask whether it might not be wise to meet the agitation against vaccination by an active propaganda undertaken by a national association which would have the support of all who love truth and value the benefits conferred upon mankind by the introduction of vaccination.

THE CONDITION OF THE PORTSMOUTH SLUMS.

CONSIDERABLE stir has been made in Portsmouth by a report issued by the "Social Reform Society" on the slums of that extensive town. It declares that the society recently instituted an inspection, and instances as a sample of its findings a yard of twelve houses, all badly out of repair and in a filthy condition, with two waterclosets only, and these without water. Another court contained eleven houses, the rooms in which were said to be mere boxes, 8 ft. square by 7 ft. high, and all in a dirty and insanitary condition. The rooms in thirteen houses in a third court were 9 ft. by 7 ft. 6 in. They were in a bad state of repair, and in each case the watercloset was in the cellar under the only living-room, and there was no ceiling to either water-closet or cellar. Assuming that these facts are correct, the reflection upon the sanitary authority is indeed a serious one. Investigations by representatives of a local paper have resulted in the discovery of similar instances of filth and overcrowding, and the matter is certainly one that should be thoroughly examined into.

THE HEALTH OF THE ARMY IN INDIA.

AFTER the meetings that have taken place at the Royal United Service Institution, and the reading of a paper by Major C. B. Mayne, R.E., with a long discussion thereon, it was only to be expected that a good deal of correspondence would follow in the public journals. There is at present, however, a lull in the discussion. The real fight will ensue when the proposals of the Government of India reach this country. Meanwhile, the general impression in India, derived from the telegraphic summary of Lord George Hamilton's despatch to that country, seems to be that the Secretary of State's proposals will prove quite inadequate; while, on the other hand, the opponents of all legislation in this country regard the despatch as going too far or are suspicious that it is intended to prove the proverbial "thin end of the wedge" for the subsequent introduction of all kinds of objectionable measures. The British Committee for the Abolition of State Regulation of Vice in India are actively engaged in sharpening the old weapons in their armoury and in printing and distributing their productions on the subject. No useful purpose will be served at the present moment by occupying our readers' attention with the matter. The profession, as represented by the Royal College of Physicians of London and the Royal College of Surgeons of England, have already spoken with some authority, and "what we have written we have written." This much, however, it is necessary to say. Any proposals that are made by the Government have reference to the British army in India only. Anyone interested or taking part in the controversy should refuse to step outside those limits. There is no pretext for now saying that it is intended to re-introduce the Contagious Diseases Acts into this country. It is the present state of health of the European force in India, and how best to protect or safeguard it against existing or prospective evils, that has now to be considered. The Secretary of State has been most moderate and guarded, it seems to us, in his despatch. We have sufficient confidence in the fairness and wisdom of the majority of people to believe that they will recognise the present lamentable state of things and the dangerous consequences that will ensue from their continuance or probable extension. Let the moderate men of all parties then honestly consider what remedial measures are at once prudent and practicable under the circumstances.

THE MÜTTER LECTURESHIP OF THE COLLEGE OF PHYSICIANS OF PHILADELPHIA.

THE next course of lectures, ten in number, instituted by the late Professor Mütter, the subject being "Some Point or Points in Surgical Pathology," are to be delivered during the winter of 1899–1900 before the College of Physicians of Philadelphia. The remuneration is 600 dollars. The lectureship is open to the profession at large, and applications for the post stating in full the details of the proposed lectures must be sent in before Oct. 1st, 1897, to the Committee of the Mütter Museum. The chairman is Dr. J. H. Brinton, corner of 13th and Locust streets, Philadelphia, Pa.

AT a meeting of the Incorporated Society of Medical Officers of Health held at No. 197, High Holborn, W.C., on Friday, the 9th inst., Mr. Edward Seaton, M.D., F.R.C.P. Lond., F.C.S., medical officer of health of the administrative county of Surrey, was unanimously elected President of the Society for the session 1897–98. At the same meeting a resolution was adopted to present a loyal and dutiful address of congratulation to Her Most Gracious Majesty the Queen on the occasion of completing the sixtieth year of her reign.

IT is stated that Lord Llandaff (Mr. Henry Matthews) has accepted the chairmanship of the Royal Commission on Metropolitan Water-Supply. The inquiry will refer to financial considerations, prospective requirements, the constitution of new powers of control, the possibility of connecting two or more different systems as occasion may require, and the division into water districts.

THE Home Secretary has selected Dr. H. Smalley, of H.M. Convict Prison, Parkhurst, to fill the post of Medical Inspector of Local and Convict Prisons, vacant by the resignation, through ill-health, of Dr. R. M. Gover. The appointment is one that is likely to be received with general satisfaction throughout the prison service.

A MEETING to promote the objects of the Hospital Reform Association will be held in the Grand Hotel, Birmingham, on Wednesday, April 21st, at 4 P.M.

ROYAL LONDON OPHTHALMIC HOSPITAL.—The annual meeting of the Royal London Ophthalmic Hospital, Moorfields, was held in the institution on March 30th, Sir John Lubbock presiding. The report for the past year showed that there had been 2006 in-patients admitted; there were also 26,074 out-patients, who made 130,370 attendances. The new buildings in the City-road were being rapidly proceeded with, and the Prince of Wales had promised to lay the foundation-stone shortly after Easter. The income for the year was £4809, and the total expenditure was £7770.

The Lancet Special Commission

ON THE

METROPOLITAN WATER-SUPPLY.

VIII.[1]

KENT WATERWORKS COMPANY (*concluded*).

Present State: General Description.

THE whole of the water supplied by the Kent Waterworks Company is obtained from deep wells and is delivered direct to their customers. There are therefore no depositing reservoirs and no filter beds. The reservoirs of the company are for the temporary storage of water. The stations of the company are: Deptford, wells, pumping station, reservoirs, and offices; New Cross, reservoir; Woolwich Common, reservoir; Plumstead, well and pumping station; Plumstead Common, reservoir; Greenwich Park, reservoir; Chislehurst, reservoir; Shortlands, wells and pumping station; Crayford, wells and pumping station; Dover-road, Shooter's Hill, pumping station; Shooter's Hill, reservoir and standpipe; Farnborough, wells and pumping station; Cowlass Hill, Farnborough, reservoir; Dartford, reservoir; Layham Farm, West Wickham, reservoir; Knockholt, reservoir; Wilmington, wells and pumping station; Westerham, well, pumping station, and reservoir; Betsom's Hill, reservoir; Pilgrim's Way, well and pumping station; and Eltham, reservoir. There are two wells under construction.

Deptford (see A on Map).—The station at Deptford is on the site of the original works of the company; part of it is to the east and part to the west of the River Ravensbourne. The part on the west side of the river consists of the offices of the company, the engineer's house, a well called the Garden Well, the old engine house, and a large garden containing the reservoir which was formerly used. The Ravensbourne is crossed by a bridge, on the site of the old water-wheel which was used for pumping. The fall in the Ravensbourne at this point is not now made use of. To the east of the river there is an enclosed space containing two wells (the New Well and the Bath Well), engine houses, and two covered reservoirs. This is the site of the filter beds which were used when the river was the source of the water-supply.

The *Garden Well* derives its name from its situation. The ground level here is 20 ft. above ordnance datum. The depth of the well is 100 ft., the diameter at the top is 15 ft., and at the lower part 12 ft. The upper 15 ft. are lined with brick, the lower part is lined with iron cylinders. There are some headings in this well and a bore-hole. The water from this well is pumped by some of the original machinery put up by Boulton and Watt. There are two engines of 50 horse-power (nominal), and these work force-pumps, which raise 42 gallons per stroke and work at about the rate of sixteen strokes a minute. The steam is generated by three Cornish boilers. The water is pumped to the high-level district in connexion with the reservoir on Woolwich Common.

The *New Well* was sunk in the year 1868. It is 100 ft. in depth and has headings. It is lined with iron cylinders to a depth of about 75 ft. The water is pumped by two Cornish engines; of these one works a lift-pump, which raises 300 gallons per stroke, and the other a force-pump, which distributes 200 gallons per stroke. The latter works against a head of 180 ft. and pumps the water to the reservoir at New Cross. The steam is generated by five Cornish boilers working at a pressure of 35 lb.

The *Bath Well* gets its name from a neighbouring street, Cold Bath-street. It was sunk in the year 1874. The depth of the well is 100 ft. and it has headings which extend for 80 ft. to a bore-hole which is situated beneath a disused well. The diameter of the well is 10 ft. and the upper part is lined with iron cylinders to a depth of 70 ft. The water is raised by a Cornish engine (brought here from Charlton, dated 1859) which works a lift-pump and a force-pump. The lift-pump raises 240 gallons per stroke from the well, and of this water so raised the force-pump lifts 100 gallons per stroke to Greenwich Park, working against a head of from 150 to 160 ft. The remainder of the water raised by the lift-pump flows to the covered reservoir. The steam for the engine is generated by three Cornish boilers working at a pressure of 35 lb. Near the Bath Well is a disused engine house.

There are two reservoirs capable of storing 2,000,000 gallons. The reservoirs are covered by concrete arches built on brick walls, and the arrangement of the walls insures a circulation of the water in the reservoir.

According to the report given by the secretary of the Company, the engines at Deptford have a total horse-power of 858.

New Cross (see B on Map).—The station at New Cross is situated in Jerningham-road, Hatcham, not far from the church dedicated to St. James. It consists of a reservoir, built in brick, arched over, and covered with turf. It is capable of holding 1,750,000 gallons. The top water line is 163 ft. above ordnance datum.

Woolwich Common (see C on Map).—There is a covered reservoir on Woolwich Common. It is situated to the south-west of the Royal Military College, and to the south of the road between the college and the Herbert Hospital. The part of the common which is occupied by the reservoir is enclosed by low iron railings to keep off cattle. The reservoir is of oblong form, covered by brick arches, and turfed over. It is capable of holding 1,500,000 gallons and is situated 248 ft. above ordnance datum.

Plumstead (see D on Map).—The station at Plumstead consists of a well and pumping station. The well is 136 ft. in depth and is lined by brick to a depth of 78 ft., and there is a bore-hole 600 ft. in depth. When visited on March 25th the water level was 107 ft. below the surface. After pumping the level has been as low as 112 ft. below the surface. Usually the well is pumped for from twelve to sixteen out of the twenty-four hours. The water is pumped by a rotative engine of 60 horse-power, which works a pair of lift-pumps and four force-pumps driven through tooth gearing. The steam is generated by two Cornish boilers working at a pressure of 30 lb. The amount of water pumped daily averages about 750,000 gallons. From this well Plumstead and Woolwich are supplied directly, and some of the water goes to the reservoir on Plumstead Common.

Plumstead Common (see E on Map).—The reservoir, built in the year 1854, is situated at a height of 170 ft. above ordnance datum. It is covered by brick arches which are supported by iron girders. The reservoir is divided into two parts internally. It is capable of holding 650,000 gallons. There is sufficient land here for another reservoir of the same size.

Greenwich Park (see F on Map).—This reservoir is situated at the highest part of Greenwich Park, not far from the Royal Observatory. The original reservoir was built by the Admiralty to store water to be used in case of fire at the Dockyard, the Victualling Yard, or the Greenwich Hospital (now the Royal Naval College). It was made about the year 1845, just after a destructive fire had occurred at the Tower of London. The reservoir is circular in form, and is now covered over by brick arches which are supported by iron joists. It is capable of holding about 1,125,000 gallons, and the top water-line is 158 ft. above ordnance datum. The water is used for the supply of Deptford and Greenwich. There is an electrical apparatus here connected with an index at the Deptford station which shows the height of the water in the reservoir, which it is necessary for the Company to know, because under the terms of their agreement with the Government Department a sufficient amount of water has to be constantly kept here, so that it may be available at all times in case of fire. The electrical apparatus was put up and is kept in working order by the Post Office authorities at the expense of the Company.

Chislehurst (see G on Map).—This station is situated at the upper part of Bickley Park, near Chislehurst Common. There is a reservoir, built of brick, covered with arches and turfed over. It has a capacity of 450,000 gallons, and the top water line is 315 ft. above ordnance datum. The water is supplied from Shortlands, and is distributed to the Bromley district.

Shortlands (see H on Map).—The station at Shortlands is situated 130 ft. above ordnance datum. There are here two deep wells sunk into the chalk. The wells are about 80 ft. in depth and lined with iron cylinders. From the bottom of

[1] Nos. I., II., III., IV., V., VI., and VII. were published in THE LANCET of Feb. 20th and 27th, March 6th, 13th, 20th, and 27th, and April 3rd, 1897, respectively.

THE KENT WATERWORKS COMPANY.

The shaded outline with the Southern bank of the river define the area supplied by the Company. Wells are marked as shaded circles. Wells under construction are marked as plain circles around a central dot. Reservoirs are marked as shaded squares. A. Deptford well, pumping station, and reservoir. B. New Cross reservoir. C. Woolwich Common reservoir. C¹. Dover-road, Shooter's Hill, pumping station. D. Plumstead well and pumping station. E. Plumstead Common reservoir. F. Greenwich Park reservoir. G. Chislehurst reservoir. H. Shortlands well and pumping station. I. Crayford well and pumping station. J. Shooter's Hill reservoir. K. Shooter's Hill stand-pipe. L. Farnborough well and pumping station. M. Cowlass Hill, Farnborough, reservoir. N. Dartford reservoir. O. Layham Farm, West Wickham, reservoir. P. Knockholt reservoir. Q. Wilmington well and pumping station. R. Westerham well, pumping station, and reservoir. S. Betsom's Hill reservoir. S¹. Pilgrim's Way well and pumping station, situated, as will be seen in the Map, on the defining line of the Company's area. T. Eltham reservoir. U. Southfleet, Gravesend, well (under construction). V. West Wickham well (under truction).

the wells bore-holes pass to a depth of 200 ft. The natural water level is about 10 ft. below the surface of the ground. After pumping the level has sunk to a level of 34 ft. 6 in. below the surface. The amount of water pumped averages 2,250,000 gallons daily. It is raised from the well to the ground level by two lift-pumps and forced into the mains by two piston and plunger pumps, worked by two inverted Cornish engines, for which the steam is generated by four Cornish boilers. These wells supply Chislehurst reservoir, Deptford, and Lewisham.

Crayford (see I on Map).—This station is situated 30 ft. above ordnance datum. There are three wells here. The one first made is 28 ft. in depth, the second 34 ft., and the third 48 ft. The wells are lined with iron cylinders. Each well has a bore-hole about 200 ft. in depth. Wells No. 2 and No. 3 are generally used. The water has been as low as 28 ft. below the surface in No. 2 and as low as 35 ft. below the surface in No. 3. At this station pumping is continuous, and the amount of water obtained averages 3,500,000 gallons daily. The water is raised to the surface by lift-pumps and forced into the mains by three-throw plunger-pumps, worked by two rotative beam-engines. The steam is generated by six Cornish boilers. No. 2 engine pumps to the high level reservoir at Woolwich Common, and No. 3 to Plumstead and Woolwich. The well No. 1 is now not used. The pumping arrangements consist of a lift-pump and a direct acting force-pump, worked by a horizontal engine. The united horse-power of the three engines is 186 (nominal).

Dover-road, Shooter's Hill (see C^1 on Map).—There is a pumping station here. A pair of 24 horse-power horizontal engines work direct acting force-pumps for the supply of Shooter's Hill. Some of the water passes though a standpipe (see K on Map) situated on the summit of the hill, and of which the highest point is about 470 feet above ordnance datum. The engines are worked for about six hours a day.

Constitution Hill, Shooter's Hill (see J on Map).—There is a reservoir here, covered with brick arches, capable, theoretically, of holding 300,000 gallons, but it is not filled. It stands at a level of 320 ft. above ordnance datum. The higher parts of Plumstead and Abbey Wood are supplied from this source.

Farnborough (see L on Map).—The Farnborough station is situated 220 ft. above ordnance datum, near Orpington railway station on the South-Eastern Railway. The chalk is here about 30 ft below the ground level. There are two deep wells about 15 ft. apart, but connected below by a gallery. The upper 30 ft. of the wells are bricked, and there are iron cylinders below this level. When visited on March 25th the water level was about 60 ft. below the surface of the ground. Occasionally in summer the water level is as low as 90 ft. below the surface. The average amount of water pumped daily is from 2 500,000 to 3,000 000 gallons. There are four engines and pumps at this station. A pair of plunger-pumps, worked by a double-cylinder Cornish engine of about 120 horse-power, pump water to Sidcup, Eltham, and Woolwich. A piston and plunger pump (No 1), worked by a Cornish engine, pumps the water to Farnborough and Chislehurst. A small engine of the Worthington type is used for pumping to the reservoir at West Wickham and to Keston. Another small engine of the Worthington type pumps water to Knockholt reservoir. The steam for these engines is generated by six Cornish boilers, four working at a pressure of 100 lb. and the other two at 35 lb. There is an apparatus at this station for softening the water used for the boilers. A workman's cottage is situated here.

Cowlass Hill, Farnborough (see M on Map).—There is a reservoir at Cowlass Hill, near Farnborough. It is square in form, covered with brick arches, and turfed over. It is capable of holding 1,400,000 gallons. The top water level is 439 ft. above ordnance datum.

Dartford (see N on Map).—Here there is a reservoir of circular form, 60 ft. in diameter, and 20 ft in depth. It is covered by arches of brick resting on rolled joists supported partly by a central iron column. The capacity of the reservoir is theoretically 370,000 gallons, but it is not filled. The top water level is 130 ft above ordnance datum.

West Wickham (see O on Map).—The station to which this name is given is situated close to the high road about three miles from the village of West Wickham, on Layham Farm. There is a circular reservoir covered with brick arches and turfed over. It has a capacity of 250,000 gallons. The top water level is 550 ft. above ordnance datum. The reservoir is enclosed by an iron fence.

Knockholt (see P on Map).—The station is situated near to, but on higher ground than, the well-known Knockholt Beeches, which are a landmark for miles round. There is a reservoir, covered with brick arches and turfed over. The top water level is 795 ft. above ordnance datum. The water is pumped here from Farnborough and is used for the supply of Knockholt, Brasted, and Westerham.

Wilmington (see Q on Map).—The station at Wilmington is situated at the extreme northern extremity of that parish, about a mile south of the town of Dartford, near the Dartford powder-mills, in the valley of the Darenth, and not far from the river. Two wells, pumping apparatus, and workmen's cottages are situated here. The wells are about 100 ft. in depth, lined with iron cylinders, and bricked at the upper part. One of the wells (No. 1) has a short gallery in the chalk. The other (No. 2) has a longer gallery ending in a bore-hole about 200 ft. in depth. The water level varies from 40 ft. to 80 ft. below the ground level, which is 30 ft. above ordnance datum. The amount of water pumped daily varies from 3,000,000 to 6,000,000 gallons. The water is pumped by a pair of compound rotative beam-engines of 260 horse-power, which work two lift-pumps for raising the water from the wells, and two pairs of force-pumps which send the water through a 24 in. main to Eltham reservoir.

Westerham (see R on Map). — The Westerham station is situated on the outskirts of the Equerry's Park. It consists of a well 70 ft. in depth, pumping arrangements, and a reservoir. The water is pumped by an overshot water-wheel, and the stream which turns it has a fall of about 15 feet. The amount of water pumped daily is about 25,000 gallons. It is pumped to a reservoir situated on an eminence hard by, at a height of 444 ft. above ordnance datum. The reservoir is a covered one, and is capable of holding 60,000 gallons. The village of Westerham is supplied partly from this source and partly from Knockholt.

Betsom's Hill (see S on Map).—This hill forms part of the North Downs, and on the map the station is marked too far to the east. It is nearer the boundary. There is here a covered reservoir, built of concrete, capable of holding 68,000 gallons. The top water line is 818 ft. above ordnance datum. The reservoir supplies a few houses on the hill. The water is pumped as occasion requires by a portable engine from a well (see S^1 on Map) situated at the foot of the downs, close to the Pilgrim's Way and the boundary between the counties of Kent and Surrey.

Eltham (see T on Map).—The station at Eltham is situated at the eastern end of the village of that name, at a height of 240 ft. above ordnance datum. There is a circular reservoir, covered with brick arches, capable of holding 3,000,000 gallons. The internal arrangements of the reservoir insure a circulation of the water, which comes in at the outer circle and makes three circuits before it passes out at the centre. All the water is pumped into and passes out of the reservoir every day. The property here is about three acres in extent and there is room for another reservoir of the same size. There is a garden enclosed, on three sides by a high brick wall. There is also a small house between the reservoir and the road.

Communications with other companies' mains.—There is no communication with the mains of any other company.

Length of new pipes.—The length of new pipes ranging from 3 in. to 20 in. laid in 1895 was 10½ miles, and during the year 1896 was 15½ miles.

Hydrants.—The number of hydrants erected during the year 1895 was 274, and during the year 1896 it was 613.

Houses under constant supply.—The number of houses under constant supply on Dec. 31st, 1894, was 61,312; on Dec. 31st, 1895 66,750; and on Dec. 31st, 1896 71,463.

Percentage of houses under constant supply.—On Dec. 31st, 1896, the percentage of houses under constant supply was 85.

Average daily supply per head.—The average daily supply per head for the year 1896 was 32·17 gallons. These figures are arrived at by the Company as follows: Average daily supply, 16,069 991; average population, 500,286. The difference between the figures given by the Company and those given by the water examiner appointed by the Local Government Board is caused by the fact that whereas the secretary to the Company makes no allowance for "slip quantities in the pumps," an allowance for this is made by the water examiner to the Local Government Board.

Date of maximum and minimum supply.—The following

table gives the date of the maximum and minimum supplies and the average daily quantities supplied :—

	Year 1895.		Year 1896.	
—	Month.	Quantity in gallons.	Month.	Quantity in gallons.
Maximum ...	June	19,875,709	July	19,392,072
Minimum ...	December	15,156,144	November	14,621,294

Communication between the Company's stations.—With the exception of the electric communication between the Greenwich reservoir and the Deptford station there is no direct communication between the Company's various stations.

Area of Supply.

The Act of 1809 authorises the Kent Waterworks Company to supply the following places, some of which are entirely supplied and some partly supplied.

Supplied : Deptford (St. Nicholas), Deptford (St. Paul), Greenwich (St. Alphege), Lee, and New Cross (within the manor of Hatcham).

Partly supplied : Rotherhithe and Lewisham.

The Act of 1811 authorises the Company to supply the following places, of which some are entirely supplied, one is supplied in part, and some are not supplied at all.

Supplied : Charlton, Plumstead, and Woolwich (south of the Thames).

Partly supplied : Peckham.

Not supplied : Bermondsey and Peckham Rye.

The Act of 1864 authorises the Company to supply the following places, which are entirely supplied : Bexley, Bromley, Chislehurst, Crayford, Dartford, Eltham, Erith, and Wickham.

The Act of 1877 authorises the supply of the following places which are entirely supplied : Beckenham (part of), Chelsfield, Foots Cray, North Cray, St. Mary Cray, St. Paul's Cray, Darenth, Eynsford, Farnborough, Farningham, Hayes, Keston, Orpington, Stone, Sutton-at-Hone, Swanscombe, West Wickham, and Wilmington.

The Act of 1888 authorises the supply of the following places some of which are entirely supplied, one is partially supplied, and some are not supplied at all.

Supplied : Cudham, Downe, Halstead, Horton Kirby, Knockholt, Southfleet, and Westerham.

Partly supplied : Brasted, Chevening, Shoreham, and Sundridge.

Not supplied : Lullingstaine or Lullingstone (private residence), and Sundridge (part of).

Subject to request by the Sevenoaks Rural Sanitary Authority : Brasted (part of), Chevening, Otford, Shoreham, and Sundridge.

New Works in Progress.

New wells are being sunk at Southfleet, near Gravesend (see U on Map), and at West Wickham, in the valley about half a mile from West Wickham Court (see V on Map). An engine house has already been erected here.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.

A QUARTERLY meeting of the Council was held on April 8th, the President, Sir WILLIAM MACCORMAC, being in the chair.

Mr. William Johnson Walsham and Mr. William Henry Bennett were introduced, and made declarations in the terms of the oath prescribed by the Charter of 1800 on their admission as members of the Court of Examiners.

The report of the Jacksonian Committee was received, and in accordance with its recommendation the Jacksonian Prize was adjudged to Mr. Cozens Bailey, F.R.C.S. Eng., the author of the dissertation bearing the motto, "There's the respect that makes calamity of so long life."—*Hamlet*, Act III., Sc. 1. The subject of the dissertation was "The Pathology, Diagnosis, and Treatment of Diseases of the Prostate Gland."

The selection of a subject for the Jacksonian Prize for 1898 was postponed.

The prize founded by the dental profession in honour of the late Sir John Tomes, F.R.S., was awarded to Mr. Charles Sissmore Tomes, F.R.S., Member and Licentiate in Dental Surgery of the Royal College of Surgeons of England, for his original and other scientific work in relation to dental surgery, dental anatomy, and histology.

The following report from the Committee of Management was received and adopted :—

The Committee of Management beg to make the following recommendations :—

1. That the following institutions be added to the list of recognised places of instruction in chemistry, physics, practical chemistry, and biology :—
   a. Bournemouth School of Science and Art (without biology).
   b. Bradford Technical College.
   c. Brighton Municipal School of Science and Art.
   d. Gloucester Municipal Schools of Science, Art, and Technology (without biology).
   e. Kingswood School, Bath.

2. That the courses of laboratory instruction in public health at the following medical schools be recognised as fulfilling the requirements of the regulations for the diploma in public health—viz. :
   St. Thomas's Hospital Medical School.
   Owens College, Manchester.

3. The Committee beg to report that in accordance with the request of the Royal Colleges they have considered the recommendations of the General Medical Council.

"That in regard to the midwifery practice to be required of candidates for licences to practise, it is desirable that the alternative to three months' attendance on the in-door practice of a lying-in hospital be in future defined as follows :—

"'Or to have been present at not less than twenty labours, at least five of which shall have been conducted throughout under the direct supervision of a registered practitioner.'"

The Committee have made inquiries of the teachers of the medical schools, both metropolitan and provincial, and have obtained from them their views on the recommendation of the General Medical Council in regard to practical midwifery. It appears that though in a certain number of schools the teachers are of opinion that the suggested alteration in the certificate is desirable and can be carried out satisfactorily, in others the teachers consider that the proposed attendance can only be fulfilled in a perfunctory manner ; and in a majority of the schools the teachers are of opinion that it would be impracticable to carry out the proposed arrangements.

The Committee report that it is not desirable to adopt the alteration in the regulations suggested by the General Medical Council, and they recommend that a reply to this effect be sent to the Registrar of the General Medical Council.

The following report from the Laboratories Committee was received and adopted :—

1. *The work on Diphtheria for the Metropolitan Asylums Board.*

The Preparation of Antitoxic Serum.

Since December 4th the Director has supplied 3001 doses of antitoxic serum containing 4000 units each, 125 doses containing 3000 units each, 350 doses containing 2000 units each, 300 doses containing 1500 units each, and 499 doses containing 1000 units, for the treatment of diphtheria in the hospitals of the Metropolitan Asylums Board, and all the demands have been fully met. During this period 14,028,000 units have been supplied, against 10,074,000 units last quarter, being an increase of 3,954,000 units.

2. *Researches in connexion with the Grant from the Goldsmiths Company.*

The Director has made the following report on the recent work done under the Goldsmiths' Research Grant, viz. :—

Since my last report on the work done in connexion with the Honourable Goldsmiths' Company Grant, Dr. Wood has continued his investigations on the production of potent diphtheria antitoxins, and has succeeded by his new method (already reported) in obtaining large quantities of strong antitoxic serums.

The highest of these serums (800 units per c.c.) is much more potent than any that has yet been placed on the market, even in Germany, where the only one that approaches it in strength is that manufactured by Professor Behring, which contains 600 normal units per c.c.

The strongest of these serums prepared by Dr. Wood has been supplied to Dr. Sidney Martin at University College Hospital, who reported to THE LANCET, Oct. 17th, 1896, that he had obtained most remarkable results by its use. In 1894 the percentage death-rate from diphtheria in that hospital was 39. In 1895, the first year in which antitoxin was used, the death-rate had fallen to 28, and in 1896 (Sept. 22nd), when the strong serum was used, to 20·5.

In Dr. Martin's figures we have additional evidence of the importance of the treatment of diphtheria by antitoxin serum at as early a stage of the disease as possible.

Dr. Martin also notes that the number of cases of post-diphtheritic paralysis was very small—only three in the whole of the cases that recovered—that not a single case of abscess occurred, and that rashes on the skin and pains in the joints were of very rare occurrence.

He further notes that no cases proved fatal unless they were severe on admission, and states that the more potent the serum the better will be the results obtained by its use, both as regards immediate effect and as preventing injurious after effects.

Dr. T. G. Brodie continues his investigations on the separation of antitoxin from the serum in which it is contained, but as yet has nothing further to report.

Whilst these investigations have been in progress I have consulted with the various workers, and have inspected and controlled many of the experiments, especially those connected with the determination of the strength of the antitoxin produced. Along with Dr. Wood I have made a large series of experiments on the standardising of test toxin

and antitoxin, which, however, are not as yet completed. In addition I have, with the help of the laboratory staff and the gentlemen above mentioned, been able to make numerous improvements in the methods of injecting the horses, of collecting blood, and separating the active serum; of keeping it aseptic; of clearing it by sedimentation; of storing it in bulk, and of decanting and distributing it in convenient form for use. Concerning these and other improvements in methods and detail I hope to give a fuller report at a future date. I cannot speak too highly of the fashion in which the investigators under the grant have carried out the work assigned to them.

In fulfilment of one of the conditions of the grant from the Goldsmiths' Company, that antitoxin should be, if possible, supplied for use amongst the poorer classes of the community, antitoxic serum has been supplied to various general and children's hospitals in London during the past quarter, as well as to certain medical practitioners for cases fulfilling the necessary conditions.

The Laboratories Committee have made a grant of £100 to the Director for his valuable services in connexion with these researches.

A statement of the attendance at the lectures delivered at the College was presented, from which it was seen that the average number of persons attending at each lecture was slightly over thirty.

The President stated on behalf of himself and the vice-presidents that they considered it desirable that an address of congratulation should be presented by the College on the occasion of the sixtieth anniversary of Her Majesty's accession, but that no further steps should be taken to celebrate the event.

A letter was read from the British Institute of Preventive Medicine offering to the Council the opportunity of nominating a representative on the Council of the Institute in the vacancy caused by the death of Sir Spencer Wells. It was agreed that the President for the time being should act as the representative.

The President (Sir William MacCormac) and Mr. T. R. Jessop were appointed delegates to the Twelfth International Congress at Moscow.

In reply to a letter from the Earl of Stamford, requesting each member of the Civil Rights Defence Committee to contribute £15 in order to discharge the liabilities of the Committee, amounting to £150, it was agreed to say that the Council could not make any contribution out of the College funds.

The Honorary Medal of the College was awarded to Sir James Paget and to Lord Lister.

Mr. William Appleton Meredith was elected a Fellow of the College under the section relating to the election of Members of twenty years' standing.

The consideration of Mr. W. Rivington's proposal to appoint a committee to inquire into the origin and meaning of By-law XV. was postponed.

BUBONIC PLAGUE IN INDIA.

THE accounts in the Anglo-Indian papers received by the last mail are more satisfactory. They show that the diminution that has taken place in the prevalence of the disease is being maintained. The latest telegram from the Governor of Bombay to the Secretary of State for India contains, however, news of a later date than that furnished by the Indian press, which only extends to the 27th ult., whereas the telegram furnishes intelligence up to the week ending the 9th inst. The deaths from all causes up to that date in Bombay city were 983, and the reported deaths from plague 368. We learn from the Indian papers that the Plague Committees are working very energetically, and the work of house-to-house visitation has resulted in the discovery of many concealed cases. The health of the city is reported as having improved during the week ending March 27th last, the total mortality, although still 600 above the average for the corresponding period during the preceding five years, was 119 less, and the deaths from plague 5 less, than that of the past week. His Excellency the Governor of Bombay had recently accompanied the committee in a tour of inspection of the isolation hospitals provided for the sufferers from the disease. The Mohammedan population recently presented a petition praying to be exempted from the segregation regulations, but the Governor very wisely, in the interest of public health, refused to accede to their request. The natives of India are naturally a very patient and law-abiding people, and notwithstanding the strength of their caste prejudices and traditions they like to have a Government which really governs, if they are only convinced of its honesty, justice, and impartiality. There have, of course, been some riots and manifestations of resistance to the new order of things. This was only to have been anticipated. But the way in which the natives have yielded to the orders of Government in connexion with the efforts that are being made to control the spread of the disease has been a remarkable and, on the whole, gratifying feature in the history of the epidemic. We trust that the application of the powers conferred by the Epidemic Diseases Act will be limited to plague cases, and that the natives will be relieved of all expense attending the cleansing and disinfection of their houses. We have already apprised our readers of the telegraphic intelligence received by THE LANCET, that the results of Dr. Yersin's antitoxic serum treatment had, unhappily, not been so successful as was anticipated, and that it was, in fact, regarded as having failed. M. Haffkine's work has appreciably increased. A laboratory has been fitted up for him on the Malabar Hill ridge. Requisitions are being received from all parts of the Presidency for the supply of his prophylactic serum, and he has been compelled to discontinue his inoculation work in order to devote himself to the preparation of serum, prophylactic and curative, to meet the demands. The number of persons that have been inoculated since Jan. 1st to March 22nd, the *Times of India* tells us, is 3452, of whom 376 are Europeans, 1632 Parsees, 174 Brahmins, 848 Hindoos, 242 native Christians, 159 Mohammedans, and 20 Jews. Amongst the inoculated are the Bishop of Bombay, the Hon. Mr. Nugent, Member of Council, judges of the High Court, several officials, and notable citizens. Tested by the method observed in the Pasteur Institute at Paris the result of the prophylactic treatment has proved to be productive of good.

The plague still continues at Karachi, and, according to the news received by the last mail, shows no signs of abatement. The total number returned from the beginning of the outbreak to March 26th is 2919 cases and 2470 deaths. At Poona there have been altogether 869 cases and 654 deaths.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

IN thirty-three of the largest English towns 6550 births and 3917 deaths were registered during the week ending April 10th. The annual rate of mortality in these towns, which had been 18·7 and 18·3 per 1000 in the two preceding weeks, rose again last week to 18·6. In London the rate was 17·5 per 1000, while it averaged 19·3 in the thirty-two provincial towns. The lowest death-rates in these towns were 11·2 in Brighton, 12·6 in West Ham, 13·5 in Swansea, and 14·2 in Halifax; the highest rates were 23·1 in Liverpool, 26·2 in Bolton and in Huddersfield, 26·7 in Manchester, and 27·1 in Salford. The 3917 deaths in these towns included 338 which were referred to the principal zymotic diseases, against 359 and 344 in the two preceding weeks; of these, 106 resulted from whooping-cough, 88 from measles, 46 from diarrhœa, 43 from diphtheria, 31 from scarlet fever, and 24 from "fever" (principally enteric). No death from any of these diseases was recorded last week in Croydon, Swansea, Derby, or Halifax; in the other towns they caused the lowest death-rates in Leeds, Bradford, and Norwich, and the highest rates in Oldham, Gateshead, Bolton, and Salford. The greatest mortality from measles occurred in Gateshead, Newcastle-upon-Tyne, Manchester, Burnley, Salford, and Bolton; and from whooping-cough in Salford, Huddersfield, Bristol, and Gateshead. The mortality from scarlet fever and from "fever" showed no marked excess in any of the large towns. The 43 deaths from diphtheria included 23 in London, 5 in Cardiff, 3 in West Ham, 2 in Oldham, and 2 in Liverpool. No fatal case of small-pox was registered last week in any of the thirty-three large towns. There were 16 cases of small-pox under treatment in the Metropolitan Asylum Hospitals on Saturday last, April 10th, against 29, 21, and 17 at the end of the three preceding weeks; one new case was admitted during the week, against 2·2 and 0 in the three preceding weeks. The number of scarlet fever patients in the Metropolitan Asylums Hospitals and in the London Fever Hospital at the end of the week was 2449, against 2622, 2585, and 2512 on the three preceding Saturdays; 224 new cases were admitted during

the week, against 206, 224, and 219 in the three preceding weeks. The deaths referred to diseases of the respiratory organs in London, which had been 313 and 282 in the two preceding weeks, further declined last week to 271, and were 121 below the corrected average. The causes of 47, or 1·2 per cent., of the deaths in the thirty-three towns were not certified either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in Portsmouth, Oldham, Sunderland, Newcastle-upon-Tyne, and in nine other smaller towns; the largest proportions of uncertified deaths were registered in Birmingham, Leicester, Liverpool, and Sheffield.

HEALTH OF SCOTCH TOWNS.

The annual rate of mortality in the eight Scotch towns, which had declined in the three preceding weeks from 23·3 to 22·1 per 1000, rose again to 24·6 during the week ending April 10th, and was as much as 6·0 per 1000 above the mean rate during the same period in the thirty-three large English towns. The rates in the eight Scotch towns ranged from 19·5 in Leith up to as much as 25·8 in Dundee and 26·7 in Edinburgh. The 733 deaths in these towns included 38 which were referred to whooping-cough, 33 to measles, 14 to diarrhœa, 4 to diphtheria, 3 to scarlet fever, and 3 to "fever." In all, 95 deaths resulted from these principal zymotic diseases, against 96 and 104 in the two preceding weeks. These 95 deaths were equal to an annual rate of 3·2 per 1000, which exceeded by 1·5 the mean rate last week from the same diseases in the thirty-three large English towns. The fatal cases of whooping-cough, which had been 33 and 41 in the two preceding weeks, declined to 38 last week, and included 26 in Glasgow and 6 in Edinburgh. The deaths referred to measles, which had been 36 and 29 in the two preceding weeks, rose again to 33 last week, of which 21 occurred in Edinburgh and 10 in Glasgow. The 4 fatal cases of diphtheria showed a decline of 5 from the number recorded in the preceding week, and included 2 in Glasgow and 2 in Edinburgh. The deaths referred to different forms of "fever," which had been 4 and 6 in the two preceding weeks, declined again to 3 last week. The deaths from diseases of the respiratory organs in these towns, which had been 159 and 146 in the two preceding weeks, rose again to 153 last week, but exceeded by 66 the number in the corresponding period of last year. The causes of 38, or more than 5 per cent., of the deaths in these eight towns last week were not certified.

HEALTH OF DUBLIN.

The death-rate in Dublin, which had been 36·1 and 38·5 per 1000 in the two preceding weeks, declined again to 35·9 during the week ending April 10th. During the thirteen weeks of the quarter ending on Saturday last the death-rate in the city averaged 40·2 per 1000, the rate during the same period being 18·4 in London and 22·4 in Edinburgh. The 241 deaths registered in Dublin during the week under notice showed a decline of 17 from the number in the preceding week, and included 41 which were referred to the principal zymotic diseases, against numbers declining from 74 to 47 in the two preceding weeks; of these, 25 resulted from measles, 9 from whooping-cough, 3 from scarlet fever, 2 from diphtheria, 1 from "fever," and 1 from diarrhœa. These 41 deaths were equal to an annual rate of 6·1 per 1000, the zymotic death-rate during the same period being 1·5 in London and 5·5 in Edinburgh. The fatal cases of measles, which had been 46, 37, and 27 in the three preceding weeks, further declined to 25 last week. The deaths referred to whooping-cough, which had declined from 20 to 9 in the three preceding weeks, were again 9 last week. The 3 fatal cases of scarlet fever were within one of the number recorded in the preceding week. The 241 deaths in Dublin last week included 43 of infants under one year of age and 43 of persons aged upwards of sixty years; the deaths both of infants and of elderly persons showed a decline from the number recorded in the preceding week. Seven inquest cases and 7 deaths from violence were registered; and 71, or nearly a third, of the deaths occurred in public institutions. The causes of 21, or nearly 9 per cent., of the deaths in the city last week were not certified.

THE SERVICES.

ARMY MEDICAL STAFF.

SURGEON-CAPTAIN W. B. LEISHMAN, having reported himself at the Royal Victoria Hospital, Netley, is taken on the strength and posted to the Surgical Division for duty. Surgeon-Major Crofts and Surgeon-Lieutenant Stammers proceed to Cork for duty, and Surgeon-Lieutenant Clarke has been posted to Dublin. Surgeon-Colonel Townsend has embarked for Bombay, and Surgeon-Major Lyle has been appointed to the charge of the Station Hospital at Colaba. Surgeon-Major North has joined at Woolwich for duty.

INDIA AND THE INDIAN MEDICAL SERVICES.

Surgeon-Lieutenant-Colonel J. McCloghry and Surgeon-Major W. H. Burke have respectively delivered over and received charge of the Rajkot Prison. The services of Surgeon-Lieutenant C. Thomson (Bengal) are placed temporarily at the disposal of the Government of the North-Western Provinces and Oudh.

NAVAL MEDICAL SERVICE.

The following appointments are announced:—Fleet Surgeons: Anthony Gorham to the *President*; and Michael Fitzgerald to the *Majestic*. Staff Surgeon Henry E. South to the *Intrepid*. Surgeons: John Lowney to the *Melampus*, and Herbert P. Shuttleworth to Chatham Hospital.

ARMY MEDICAL RESERVE OF OFFICERS.

Surgeon-Captain William Lloyd Edwards, Severn Division, Submarine Miners, Royal Engineers (Volunteers), to be Surgeon-Captain. The under-mentioned officers to be Surgeon-Lieutenants: Surgeon-Lieutenant Harry Legh de Legh, 1st Volunteer Battalion the Princess of Wales's Own (Yorkshire Regiment), and Surgeon-Lieutenant William A. Griffiths, 1st Volunteer Battalion the Hampshire Regiment.

VOLUNTEER CORPS.

Royal Engineers (Volunteers): 1st Hampshire: Surgeon-Lieutenant William Blaikie Mason resigns his commission, and is appointed Second Lieutenant. *Rifle*: 3rd Volunteer Battalion the Lancashire Fusiliers: Surgeon-Lieutenant S. McNair resigns his commission. 3rd (Duke of Connaught's Own) Volunteer Battalion the Hampshire Regiment: Surgeon-Captain C. Knott to be Surgeon-Major.

RATES OF PAY FOR THE MEDICAL SERVICES IN INDIA.

The Secretary of State for India has approved the following revised rates of pay for officers of the Army Medical Staff borne on the Indian establishment and for certain grades of the Indian Medical Service, with effect from April 1st, 1897: Brigade-surgeon-lieutenant-colonel, Rs. 1150 per mensem; surgeon-lieutenant-colonel, Rs. 1056—after twenty-five years' service, Rs. 1093; surgeon-major, on appointment, Rs. 789—after fifteen years' service, Rs. 825; surgeon-captain and surgeon-lieutenant, Rs. 350; surgeon-captain after five years' service, Rs. 450; surgeon-captain after ten years' service, Rs. 500. These rates of pay, however, will not be applicable to officers of the Indian Medical Service holding no specific appointments, except surgeon-captains and surgeon-lieutenants. The grade pay laid down in Article 306 C, Army Regulations, India, Volume I., for officers of the Indian Medical Services is to be revised as follows: Brigade-surgeon-lieutenant-colonel, Rs. 900; surgeon-lieutenant-colonel, Rs. 852—after twenty-five years' service, Rs. 888; surgeon-major, on appointment, Rs. 640—after fifteen years' service, Rs. 677; surgeon-captain and surgeon-lieutenant, Rs. 300; surgeon-captain after five years' service, Rs. 400; surgeon-captain after ten years' service, Rs. 450. These rates of pay will be drawn by all medical officers in receipt of staff salary or holding no specific appointments, except as provided in Article 520 of the Regulations quoted. A brigade-surgeon-lieutenant-colonel in charge of a native regiment is to receive Rs. 1100 per mensem, consolidated pay.

THE "DRUMMOND CASTLE" AND "WARREN HASTINGS" DISASTERS.

The extremely kind and sympathetic way in which the French have behaved to the passengers and crews in connexion with both these wrecks has been most gratifying. Of course, the scene of the disaster was different in the two cases, but the treatment accorded to the sufferers was the same. It will be remembered that in the case of the

Warren Hastings the troops on board that vessel, who behaved with so much courage, coolness, and perfect discipline under the most trying circumstances, met with great kindness and assistance from the French authorities and inhabitants. The circumstances of the *Drummond Castle* disaster are still fresh in the recollection of most people. We are glad to notice that a clock for the church tower of Molène has recently been presented, in commemoration of their charitable and friendly conduct to the curé and the rest of the French population of that place. The medals struck by order of Her Majesty to mark the memorable services of the fisher-folk at the time of the loss of the *Drummond Castle* will be presented by Sir E. Monson, the British Ambassador, on the 27th inst.

THE TURKO-GREEK FRONTIER FORCES.

No information has been published regarding the health of the Greek force. There has been a heavy fall of snow in the vicinity of Trikhala, and some of the Italian volunteers who took part in the late invasion of the Turkish frontier have been unable to endure the cold and have returned. The Turkish army is said to be healthy and fairly well provided. The number of their sick in the four divisions posted in the neighbourhood of Elassona only amounts, it is reported, to 1 per cent. Edhem Pasha has authorised the *Times* special correspondent to contradict the rumour as to the prevalence of small-pox in his force; there is not a single case in the whole army.

The Queen has granted the under-mentioned officers Her Royal licence and authority to wear the Insignia of the Imperial Order of the Medjidieh of the Fourth Class, which has been conferred upon them in recognition of active and distinguished service before the enemy during the recent Dongola Expedition:—Surgeon-Captain Charles Stuart Spong, A.M.S., and Surgeon-Captain Henry Ernest Hill Smith, A.M.S.

Correspondence.

"Audi alteram partem."

"RIGHT-HANDEDNESS."

To the Editors of THE LANCET.

SIRS,—In THE LANCET of to-day Professor G. V. Poore remarks—"I believe that right-handedness is a necessity and depends upon the distribution of the weight of the viscera in the thorax, and that our four-limbed ancestors were right-pawed long before they began to stand on their hind-legs for oratorical or other purposes. The weight of the viscera in the left half of the thorax is considerably greater than that of those in the right half." That is so, but it is mainly in the abdomen the disturbance of equipoise arises, the liver more than balancing the cardiac preponderance on the left side, and placing the centre of gravity to the right side. For the demonstration of that, reference may be made to the evidence contained in my paper "On the Relative Weight of the Viscera on the Two Sides of the Body; and on the consequent position of the Centre of Gravity to the Right Side."[1] From experiments made in the dissecting room and post-mortem room, extending over several years, the conclusion reached was that the viscera give a preponderance to the right side of 22¼ oz.; or, if deduction be made for the weight of food in the stomach, of 15 oz. clear preponderance on the right side, in the adult. And that is not an over-estimate. We have thus a natural physical cause. The greater weight on the right side leads to resting most on the right leg, and, from this pillar of support, we naturally use the right upper limb preferentially.

The question is—Why the hand of that side is the preferred one among all races of mankind? In view of the close correspondence in internal structure among all races of mankind, it is not easy for the anatomist to believe that the human species arose otherwise than from one centre. That may be held although the phenomena of development, the presence of rudimentary structures, and the occurrence of minor variations point to the descent of man from some previous form. On the hypothesis of unity of origin the explanation of right-handedness is easy. One hand would naturally be fixed on; the young would be trained to use the same hand; and the influence of that on the left hemisphere of the brain would ere long give a hereditary or "instinctive" tendency to prefer the right hand. But from the beginning there has been the natural physical cause in visceral preponderance on the right side, and whatever hypothesis we adopt as to the origin of man, that cause has been in operation as a potent accompaniment of the erect posture.

The late Professor Andrew Buchanan of Glasgow had, in 1862, propounded the hypothesis of the above-mentioned physical cause, founding it on the idea that by the descent of the diaphragm in inspiration the liver is pushed to the right side, disturbing the supposed equipoise. My research, above referred to, gave his hypothesis a basis in anatomical fact, that there is naturally a considerable visceral preponderance on the right side, and the mode of operation of that physical cause is evident. To that passive physical cause would soon come to be added the effect of the greater use of the right hand on the activity of the left cerebral hemisphere; thus bringing heredity to strengthen the tendency to prefer the right hand, originating in the visceral preponderance. Thus, the greater activity, or it may be also the greater bulk, of the left hemisphere of the brain is not the primary cause, but merely the secondary or ancillary cause.

The whole question is ably discussed by my late esteemed friend, Sir Daniel Wilson,[2] but it will not do, as he concludes, to put aside the hypothesis of the influence of visceral preponderance from the difficulty of its not fitting every exceptional case. For example, cases of transposition of the viscera in which the person was not left-handed. We do not know what the early domestic training of these persons was, and it does not follow that the hereditary transmission to the left brain had also been transposed. No explanation that I have yet seen propounded can account satisfactorily for the occasional occurrence of instinctive and inveterate tendency to left-handedness, of which Sir Daniel Wilson himself was an example. The supposition of variation in the direction of the heredity, going to the right hemisphere instead of the left, might, however, be a satisfactory explanation. There is no accounting for some of Nature's variations. Why not the occurrence of transposition of heredity between the two sides of a bilateral organ *per se*, as well as the occurrence of transposition of unilateral organs *per se*? We can give no reasonable explanation of the latter occurrence.

The preferential use of the right hand does not, according to my observation, show itself in very young children, but only after they have assumed the erect posture and begun active exertion. Nor does it follow that the part heredity plays will operate from the very beginning. Heredities have their period in showing themselves. The visceral preponderance hypothesis applies to a much less degree in the quadruped, but leather merchants tell us that the right side of the hide is known as the "lying" side. The want of equipoise tells more in the human form, owing to the erect posture and the greater lateral development of the trunk; and the less intelligence of the quadruped dispenses with the advantage of a skilled limb. In regard to the use of our feet, relatively there is not much difference, but we use the right preferentially in vigorous acts. The right lower limb has become the stronger from being the chief pillar of support under visceral preponderance, and the reaction of the consequent greater development of the left cerebral hemisphere will come to contribute. I think most persons, who have never had an injury to either lower limb, will find that the sole of the right shoe wears before that of the left.

I am, Sirs, yours faithfully,

Edinburgh, April 10th, 1897. J. STRUTHERS.

[1] Edinburgh Medical Journal, 1863.

"THE HOSPITAL REFORM ASSOCIATION: REPORT OF THE COMMITTEE APPOINTED TO INQUIRE INTO THE WORKING OF THE SPECIAL HOSPITALS OF LONDON."

To the Editors of THE LANCET.

SIRS,—Permit me, as a hospital secretary with an experience in both general and special hospitals of close upon a quarter of a century, to make brief comment on the "Report of the Committee appointed to Inquire into the

[2] The Right Hand: Left-Handedness, Nature Series, 1891.

Working of the Special Hospitals of London." Presuming to take my own case as a sample of the rest, I fully reciprocate the general acknowledgment of the committee for courteous reception, but I must add from the manner in which they exercised their commission, as well as from the very nature of a tabular statement, no new facts are really brought forward. Those that are presented we have been quite familiar with, for similar statements have been published times without number during the past twenty-five years. But the report now under consideration clearly shows that the imputation so freely laid against special institutions, that "hospital abuse" is more rampant with them than with the older and larger hospitals, is practically dispelled.

To state my objections, still briefly, but with more detail. In the first place the visit, which should have been one of hours in duration, was, at this hospital at least, hardly of minutes, and this in spite of my eagerness for thorough investigation. In fact, an excuse for hurry both commenced and cut short the interview. So anxious, however, was I that the report should be full and complete that I called on one of the members of the committee. As a result I was asked to add in writing to their report; but since this addition—to be presently alluded to—is not published it might as well not have been made. Secondly, a tabular statement, always incomplete, is in this instance especially unsatisfactory, since it implies an effort to bring into harmony things which are dissimilar—e.g., an ophthalmic hospital, treating probably a hundred new out-patients each day, is compared with a hospital for paralysis, which admits from two to three only. Thus, although £318 is taken in boxes from the former, the proportion of self-help on the part of the patient is nothing when compared with that of £632 from the Paralysis Hospital, where, with an average of from two to three per diem, one-half are stated to have a letter and the remainder are reported to pay only 6*d*. Without pointing to other discrepancies, the appended "remarks" are both incomplete and incongruous—incomplete, for instance, because I stated, in answer to an invitation, that in the past year 1000 patients had been sent by medical practitioners, and "that the majority of these patients sent by medical men are in a much better position of life than the patients not so recommended, and that the patients are not merely sent for a diagnosis, but for the treatment." These words have been omitted. Indeed, so frequent is the charge that general practitioners are injured by these special hospitals that it is a matter of surprise the committee did not ask for information on this point. Had they done so my experience leads me to believe that this imputation would have been dispelled as completely as many other equally baseless in fact. To give but one instance of the incongruity of the "remarks" of the committee, they have included two or three institutions which are apparently private concerns, and another one which is in no sense a hospital, but a home for the dying. Finally, it must be gratifying to all concerned with special hospitals that there is no evidence deduced that the medical officers of the institutions derive personal emolument as has been so frequently asserted; and, indeed, the suggestion of the committee that patients "might obtain a specialist's advice on the payment of a small sum, say, from 5*s*. to 10*s*., a portion of which would go to the specialist himself," would be generally dismissed with scorn. The committee, however, be might have gone further; the information supplied shows that an institution may be conducted on a charitable basis yet with businesslike principles, and, indeed, if these were more generally recognised the whole question of hospital impecuniosity might be solved—but that is another story.

I am, Sirs, your obedient servant,

RICHARD KERSHAW,
Secretary, Central London Throat and Ear Hospital.
Gray's-inn-road, April 12th, 1897.

HOSPITAL ABUSE AND ITS SUCCESSFUL PREVENTION.

To the Editors of THE LANCET.

SIRS,—During the last six years a scheme for the prevention of abuse in the out-patient department has been in force at the Great Northern Central Hospital at Holloway, and the success that has attended it will be of interest to hospital managers and others who have paid attention to this vexed question. The Great Northern Central Hospital scheme consists essentially of systematic inquiry both as to the social and as to the medical fitness of its applicants for relief. The social qualifications are investigated by a sub-committee composed of representatives of the committee of management and the medical staff. Their inquiry officer, who must be well acquainted with the district and with the conditions of labour therein, is required by them to investigate every case, and if any doubt arises in his mind as to the social fitness of any patient for gratuitous relief he is empowered to put a series of questions laid down by the sub-committee and to record the answers on special forms. These questions relate to wages and income from all sources, number of children, duration of illness, whether in or out of work, &c. The answers are then compared with a wages scale, carefully drawn up to meet all ordinary cases, and approved by the local managers of the Hospital Saturday Fund. If the case does not come within the limits of the scale the patient is refused further aid unless he provides himself at his next visit with a certificate of fitness from his own medical man or his employer, a blank form being given to him for the purpose. First aid is, however, given in nearly all cases. The medical fitness of applicants is decided by a special medical officer, also a resident in the district, who only admits patients to the out-patient department suffering from definite illness. He is empowered to treat the trivial cases once, but such patients are not permitted to attend a second time.

In October, 1891, after the system had been in force for twelve months, the sub-committee were able to report "that cases of flagrant abuse of the charity have been promptly detected and summarily excluded, and that more than half the number of those required to bring certificates failed to bring them." A second inquiry into the working of the system from 1892 to 1896 has recently been made, and it has been shown that flagrant abuse is now rarely attempted. For instance, in the year 1895 the total number of new patients was 18,050, of whom only 423 were excluded. In the year 1896 the number of patients had risen to 20,935, and the cases excluded by the system of inquiry fell to 200. Taking the figures for both years it is shown that the number of actual rejections has been as few as 1·6 per cent. The figures show that the number of applications has increased, and it is thus evident that the system has only driven away the unsuitable applicants for relief, while it remains popular with the really necessitous poor. It is worthy of note that in one year 68 per cent. of the certificates returned were signed by the patients' own medical men. It may be assumed that many of the patients who have been refused as unsuitable at the Great Northern Central Hospital have applied successfully at some other hospital where no questions are asked, and it is obvious that the abuse of the charities by such people can only be checked by the adoption of a uniform system of inquiry. We consider, however, that the experience of our hospital has clearly shown that it is possible to protect the great medical charities from abuse without any injustice towards rightful applicants for relief.

We are, Sirs, yours faithfully,

C. T. MURDOCH, Chairman,
W. BURDETT-COUTTS, Treasurer, } Great Northern Central Hospital.

March 31st, 1897.

To the Editors of THE LANCET.

SIRS,—I wish to bring this paragraph in the *City Press* to your notice as we have been told that special hospitals are particular offenders against the medical profession in the matter of indiscriminate out-patients:—

"So much is constantly heard of the laxity that prevails at our hospitals as regards the admission of patients who are able to pay for medical attendance that it may not be inopportune, more especially in view of the Prince's appeal, to give a glimpse of the other side of the picture. Such a view is afforded by a statement made in the annual report of the Royal London Ophthalmic Hospital. It seems that last year no fewer than 823 persons were rejected on the ground that, on investigation, it was found that their cases were not such as to entitle them to relief. This total represents something like 3 per cent. of the total number of out-patients. In other hospitals a like stringent inquiry takes place, with equally commendable results."

I am, Sirs, yours faithfully,

April 12th, 1897. G. P.

THE NOTIFICATION OF TUBERCULOSIS.

To the Editors of THE LANCET.

SIRS,—In the account of my paper read before the Epidemiological Society on the Prevention of Tuberculosis given in your issue of April 3rd one or two misapprehensions have occurred.

I did not say that congenital tuberculosis rarely, if ever, occurred. The words "if ever" should be omitted. I did not admit that notification of phthisis had been tried in Manchester and had failed. Notification in any proper sense has not been tried in Manchester. Less than thirty cases were, I understand, submitted to the Health Office for purposes of disinfection, which was then taken to mean chiefly fumigation. This is not intended to minimise the excellent work of education done by Dr. Ransome, but to prevent an unjust aspersion being put on notification, its objects and its uses.

I am, Sirs, yours faithfully,

Manchester, April 9th, 1897. JAMES NIVEN.

DEBT-COLLECTING ASSOCIATIONS.

To the Editors of THE LANCET.

SIRS,—Several complaints having reached my society concerning the methods adopted by certain so-called associations professing to have been formed for the purpose of collecting medical debts, my society will be glad to hear from any of your readers who have had dealings with any of such associations and who are dissatisfied with their procedure. An association of the kind referred to, which has especially been brought under the notice of my society, has changed its name and address so frequently that it is difficult to suppose that inconvenience has not been caused to members of the medical profession.

I am, Sirs, yours faithfully,

HUGH WOODS,
Hon. General Secretary.

The London and Counties Medical Protection Society, Limited, 12, New-court, Lincoln's-inn, April 12th, 1897.

THE ROYAL COLLEGE OF SURGEONS IN IRELAND AND THE PREVALENCE OF VENEREAL DISEASE AMONGST THE BRITISH TROOPS IN INDIA.

To the Editors of THE LANCET.

SIRS,—I am directed to inform you that at their last meeting the President, Vice-president and Council of the Royal College of Surgeons in Ireland passed the following resolution: "We, the President and Council of the Royal College of Surgeons, being deeply impressed by recently ascertained facts concerning the development and alarmingly increased prevalence of venereal disease amongst British troops in India, and also the apparently exceptional virulence of the malady there, are strongly of opinion that the time has arrived when some active steps should be taken by the Government to check the disease, not alone in the interests of those primarily affected, but of their immediate descendants and of the community at large in India and the United Kingdom. The facts recently elicited by the Departmental Committee presided over by Lord Onslow the President and Council of this College consider as nothing short of appalling, and such as to imperatively require that an effort should be made at once to check and mitigate the evil, as otherwise the public health in these countries, not merely in the present, but in the future, will be seriously imperilled."

I am, Sirs, yours faithfully,

ROBT. H. WOODS, F.R.C.S. Irel.,
Secretary of Council.

Dublin, April 7th, 1897.

THE INTERNATIONAL CONGRESS OF MEDICINE, MOSCOW, 1897: A GOOD ARRANGEMENT.

To the Editors of THE LANCET.

SIRS,—It is probable that many London and provincial medical men will attend the Congress at Moscow, from Aug. 19th to 26th. There is always a certain amount of trouble and inconvenience in arranging isolated parties of twos and threes, and it occurred to me that it might be a pleasant arrangement if those of us who are going from this country were to form a party and go together. I have been in communication with Messrs. Thomas Cook and Son, who have been most obliging, and they have prepared a programme at an inclusive fare of 45 guineas each person, providing for first-class travel tickets from London, *viâ* Berlin and Warsaw, to Moscow, returning *viâ* St. Petersburg, Helsingfors, Stockholm, Copenhagen, and Hamburg, Flushing, London, with hotel accommodation consisting of breakfast, luncheon, dinner, and bedroom, lights and service, restaurant and sleeping-car accommodation, free conveyance of 56 lb. of luggage, fees to hotel and railway servants, *and the services of a competent conductor*, who will superintend the travelling arrangements throughout. Messrs. Cook and Son's terms are so reasonable that I hope many will be prepared to join the party. Messrs. Cook and Son will send a detailed programme to anyone applying, and will be pleased to answer all questions.

I am, Sirs, yours faithfully,

ARTHUR G. BLOMFIELD, M.D. Aberd.

Exeter, April 12th, 1897.

"THE ESSENTIALS OF CHEMICAL PHYSIOLOGY."

To the Editors of THE LANCET.

SIRS,—In the review of the above book, published in THE LANCET of April 10th, I notice that your reviewer blames me for introducing no mention of the application of Lovibond's tintometer to the estimation of the corpuscles and the colouring matter of blood. May I be allowed to point out that the book in question was published in the early part of last year, prior to the publication of Dr. George Oliver's work on this question? I was perfectly well acquainted with the principles of Dr. Oliver's new hæmoglobinometer at the time, but it was obviously impossible for me to publish prematurely what Dr. Oliver had been doing. Your reviewer is in error when he speaks of the applications of the tintometer to the enumeration of the corpuscles. Dr. Oliver's hæmocytometer is sold by the Tintometer Company, but it has no further relation to the tintometer of Lovibond.

I am, Sirs, yours faithfully,

April 10th, 1897. W. D. HALLIBURTON.

"TINNED SALMON."

To the Editors of THE LANCET.

SIRS,—Will you permit me to call your attention to the enclosed notices from the *Manchester Courier* and the *Manchester Guardian* of what took place in the police-court of that city on the 26th ult. The Charles Wood therein referred to is the person who wrote a letter to the *Globe*, from which you quoted and upon which you commented in your issue of the 20th ult., under the heading of "Tinned Salmon." Having regard to the motives which actuated the writer of the letter in question we feel that we are justified in asking you to explain to the readers of your much valued journal that the source from which the damaging reports emanated is, to say the least, an entirely unreliable one. We need hardly point out that a reproduction of a false report by a publication of the authority and influence of THE LANCET is in the highest degree damaging to the interests of those engaged in the trade.

The tinned fish trade has developed enormously, and it is computed that not less than 20,000 tons is annually consumed in this country. The packing of the canned salmon is carefully watched by the Canadian Government, and the out-turn on this side is very critically and thoroughly inspected in the ordinary course of trade by experts before a single tin is offered for sale. In fact, the trade have recognised that it must, in their own interest, be their first duty to protect the consumer, and it would under present conditions be quite impossible for such fish as described by the *Globe* correspondent to reach the public. We notice your article has been reproduced and quoted in other publications, which, although of comparatively little importance in themselves, yet when mentioned in connexion with the name of your paper cannot fail to be seriously regarded. We very sincerely hope that you will see your

way to inform your readers of the unreliable source from which the information in the first instance arose.

I am, Sirs, yours faithfully,

(For J. Travers and Son, Limited),

London, E.C., April 9th, 1897. H. STABLEFORTH.

*** We noticed Mr. Wood's letter, published in the *Globe* of March 10th, in our issue of March 20th because of the startling statements it contained, but we expressed a doubt as to the accuracy of the details, seeing that the statements had been categorically denied.—ED. L.

HOSPITAL ABUSE.

(BY OUR SPECIAL COMMISSIONER.)

VII.—COVENTRY.[1]

Predominance of the Working Class Subscribers.—The Visiting Staff and the Out-patients.

THE question of working-class control in the management of hospitals, which is causing so much discussion in Leeds, has also been ardently debated in Coventry. Nor is this a new difficulty. So far as Coventry is concerned, it dates back to the year 1889; and, of course, it is intimately associated with the problem of hospital abuse. At the annual meeting of subscribers to the Coventry and Warwickshire Hospital, held in 1883, four governors were elected from the Working Men's Hospital Saturday Committee. That was the best moment for protestations, for it was then that the principle of working-class representation was established. The number of working men representatives and the amount of their subscription were then so small that their admittance seemed to be merely a question of courtesy instead of an act likely to produce far-reaching practical consequences. It was not till the year 1889 that the possible effects began to be realised. In May of that year a proposal was brought before the general committee, which is the managing body of the hospital, demanding that for every £20 the workmen subscribed they should be empowered to elect one governor. The rule of the hospital is that "all persons being subscribers of one guinea or more annually shall be governors during payment." In 1888 the workmen had subscribed more than £900, and yet only appointed four governors. To elect a governor it had cost the workmen over £230, though the ordinary subscriber became a governor at the cost of only one guinea. As a compromise between these two extremes it was proposed to give the workmen a governorship for every £20 subscribed. This would have placed forty-five working men representatives on a body consisting of 450 governors. On the financial basis the workmen might have claimed a larger representation; but as far as could be ascertained they seemed well satisfied with this compromise. A general meeting of governors was convoked to discuss the matter, and readily adopted a resolution that the number of working men on the general committee should be increased from four to six. This was illogical, for if working men are to be excluded as governors why should they be admitted on the managing committee. The discussion displayed considerable class feeling. It was said that the middle classes subscribed to provide a hospital for the working class, and that as the middle classes did not derive any benefit from it they ought to control the institution. The answer made was that in that case obviously the working-class ought not to be asked to subscribe. Also it was pointed out that the middle and upper classes did derive benefits from the hospital, for they not infrequently went there themselves, and often sent their servants. The alarm was also raised that the hospital would become a provident dispensary. In looking back at the records of this dispute I find much that confirms what I have already stated with regard to a similar movement at Leeds. For instance, the following passage from the first leading article in the *Coventry Herald* of May 19th, 1889, is almost identical with the description I gave of the feeling at Leeds: "It need not be wondered at if the Saturday collection should to some extent have fostered the idea that those contributing to it thereby establish special rights. The hospital is very properly held up as a working man's interest, and when working men subscribe to it the further step to a sense of proprietorship is easy. A penny a week to the provident dispensary gives such and such privileges; why not the same at the hospital? They are both medical institutions, and both exist for the benefit of the working class. If this reasoning is fallacious we must admit that it is also natural, and therefore in a measure inevitable."

To the claims set up by the working men it was objected that the hospital buildings and plant had cost about £25,000 and the working men had not contributed anything to this capital outlay. On the other hand, the majority probably of the present guinea subscribers had also not contributed to this original capital outlay, and yet they were governors. Another argument was based on the belief that the honorary medical staff were opposed to the innovation, and the time, skill, and knowledge they devoted to the care of the patients were more valuable than the £900 contributed by the workmen. Nobody, however, denied this, and any claim the medical staff might have made to a voice in the management of the hospital would have been received with favour. At the meeting of the governors convened to discuss the whole question Dr. Milner Moore urged that for years people had been in the habit of receiving charity from the hospital and that of late only had they been stirred to such a sense of self-respect as led them to contribute to the hospital at first £200 in a year and now £900. But they had at the same time received the benefits of the institution. The medical staff received no return for the work they gave. In large centres like London or Birmingham there was an advantage in belonging to a hospital. A medical man might there become a professor and a consultant and derive advantage from his students, who in after life called him in. This was not the case in the smaller towns where there was no clinical school. The original subscribers to the Coventry Hospital, who had devoted hundreds of pounds to build it up, never intended that it should become a provident dispensary for persons able to pay, and he thought that by increasing the working-class representation they were drifting in that direction. Mr. Iliffe urged that this tendency would drive medical men in self protection to demand payment for the services they rendered at the hospital—a suggestion which was received with cheers. He thought workmen who earned £2 or £3 a week could afford to pay for medical attendance, and he objected to granting them a governor's rights for every £20 they subscribed "because under such a plan the time would come when those who freely gave their donations would be overwhelmed in the administration of the institution. Coventry was a growing city and sooner or later the adoption of this proposal would convert the hospital—erected as a refuge for the poor—into one gigantic provident institution." In spite of these two protests the resolution was only defeated by a majority of one—16 to 15. This was such a small vote and such a small majority that it was decided to submit the question to all the governors, a poll having been demanded.

Pending the day of the poll the controversy was resumed, notably by the local press, and some communications were also addressed to the medical journals on the topic. Protests were made that subscriptions, whether large or small, conferred no rights on the patients, that it was easy to understand the dissatisfaction of the medical men who gave their services gratuitously when they found the penny a week subscriptions flung, as it were, in their faces. The honour of the working men as a class was appealed to and they were urged to put an end to so unworthy a conception. If they wanted a return for their pennies, then the benefit societies or the provident dispensaries were open to them. It could not, however, be denied that the dispensary idea did prevail among many of the hospital patients. This found its origin not so much in the Saturday collection, but rather in the fact that for every guinea subscribed three letters of recommendation to the hospital were given. In 1883 the Working Men's Committee had received 2586 tickets, and thus the connexion between paying and receiving had been established. Then, again, it was pointed out that, whereas the middle-class governors of the hospital took but little interest in the

[1] The previous articles on this subject were published in THE LANCET on the following dates: (1) Sept. 26th, 1896, Plymouth and Devonport; (2) Oct. 10th, 1896, Exeter; (2 *continued*) Oct. 17th, 1896, Exeter; (3) Oct. 31st, 1896, St. Thomas's Hospital, London; (4) Nov. 14th, 1896, Liverpool; (4 *continued*) Nov. 21st, 1896, Liverpool; (4 *continued*) Dec. 12th, 1896, Liverpool; (5) Jan. 2nd, 1897, Manchester; (5 *continued*) Jan. 9th, 1897, Manchester; (5 *concluded*) Jan. 23rd, 1897, Manchester; (6) Feb. 6th, 1897, Leeds; and (6 *concluded*) Feb. 13th, 1897, Leeds.

work, rarely attended meetings and rarely voted, the forty-five workmen, if they were appointed, would attend regularly and vote as one man. This, though undoubtedly true in fact, was a poor argument to adduce, as it is difficult to evoke sympathy for people who fail to attend to their own affairs.

The worst feature of the matter has still to be mentioned: the workmen's subscriptions, in the majority of cases, though theoretically voluntary, are in practice compulsory. Taking the evidence of workmen themselves this is how the matter is explained by a journeyman watchmaker whose letter the *Coventry Herald* published on May 31st, 1889: "They say that it is a rule made by the men—a rule of the shop—and can be altered if not liked. This rule was made three or four years ago, because workmen had been urged by certain gentlemen at hospital annuals. Say, then, a man this year makes application for employment, he gets put on; he is told of this rule, but is also told that he need not pay if he don't like—that it is voluntary. He is compelled to pay because others pay, and he would be marked among his mates and boycotted, so he keeps his mouth shut and pays, glad to get employment on such terms. Say, however, he is told it is voluntary; then the rule would be a lax one. Soon it would be whispered A, B, and C don't pay—then why should I pay?—and the whole concern would pretty well soon fall to the ground, for it would not hold together six months, much more three or four years; but, say all of them are loyal and keep loyal, then, sir, they deserve all they ask for, even if it is only a tribute to their self-denial."

This workman then goes on to complain that certain gentlemen for several years patted his class on the back and urged them to show their independence. When the workmen take this hint to the extent of subscribing £900 a year, then these same gentlemen turn round and, as the writer describes it, say: "Oh, come, we did not bargain for this; this is too much. You must keep as you were. You must let us patronise you. You haven't got the same intelligence as we have to manage a large institution like a city hospital. It was built expressly for you, not for us; then it is impudence of you to want to share in its management." Thus we have the dilemma: Either the workmen are independent donators—and in that case they claim to have the same share in the management of the hospital as is given to the middle-class donators—or else they are not independent; then they ask for a return for their money on the provident dispensary principle.

Such were some of the arguments with which the governors of the hospital had to deal. As if to confirm the argument that a small body of workmen would override a large body of middle-class men because of the lack of discipline and the negligence of the latter, barely more than 10 per cent. of the governors went to the poll. In this small poll the majority in favour of the working men's claim was in the proportion of two to one. At the last moment the opposition made by the honorary medical staff of the hospital completely broke down and the workmen and their friends swept the boards. From that day for every £20 collected among working men a working-man governor of the hospital has been appointed.

Since this eventful decision the population of Coventry has greatly increased. A large number of workmen have come to this town so as to profit by the "bicycle boom," and the workmen's subscriptions for the year 1896 amounted to £1300. Consequently there are sixty-four elected working-men governors and six *ex-officio* working-men governors. The subscribers of a guinea and upwards amount in all to 560 or thereabouts; but though these latter are also governors and still constitute a vast majority, it is, as foreseen, the working-class element that is the active element. Thus it may now be said that no medical man could be elected on the staff of the hospital if the working-classes were opposed to him. The recent election of a surgeon to the hospital staff was carried by the working class vote. To avoid this Dr. Moore, consulting surgeon at the hospital, had proposed that the medical officers of the hospital should be appointed by a special committee of selection to be nominated by the general committee which manages the hospital. But a working-class representative at once moved an amendment to the effect that such a course would reduce the privileges of the subscribers. Dr. Moore urged that it was an expensive matter for a candidate to canvass an electorate of some 600 persons; also such canvassing was a means by which medical men might unfairly advertise themselves. On the pretext of canvassing for his election a new comer or a comparatively unknown practitioner might call on all the donators to the hospital, and in soliciting their vote would have an excuse for expatiating on his own merits. Then he could also appeal to the public in the local papers, always in view of the election. Finally, as the new comer or unknown practitioner would have no serious chance of being elected he might magnanimously withdraw at the last moment. In the meanwhile a good advertisement would have been secured. Then, again, it was urged that the better class of subscribers did not like the annoyance of being canvassed. These arguments were met by the working men representatives. The latter declared that if appointments were entrusted to a small and special committee such a body would be sure to incur the suspicion of jobbery. If the high-class subscribers objected to be canvassed the working people who were also subscribers had no such objection; then as the workmen constitute the majority of the patients it was very natural that they should wish to have a voice in the appointment of the medical men. These arguments prevailed, and Dr. Moore's proposal was rejected. Thus once again the workman element was master of the situation.

While the working classes are increasing their hold on the hospital the usual subscribers and donators are showing some lukewarmness. Thus for the year 1896 the income of the hospital from all sources amounted to £3374 8*s.* 4*d.*, or £57 16*s.* 6*d.* less than the previous year. But while the general sources of income fell off the workmen's subscriptions, which amounted to £1000 in 1895, rose to £1300 the year following. But for the extra £300 given by the workmen the condition of the accounts would have been little short of calamitous. The workmen have contributed more than a third of the total receipts of the year; their subscriptions are ever increasing, while the donations from the other classes were last year £123 less than the former year, the collections in country parishes £10 18*s.* less, and the legacies £70 less. There can be no doubt that the voluntary subscriptions given by the middle and upper classes are declining in the face of the working-class subscriptions. A local practitioner with whom I discussed this matter said that there did not seem energy enough remaining even to organise a bazaar for the hospital. On the other hand, he maintained that the workmen resented the pressure put upon them by their employers or foremen, by which they were obliged to subscribe their penny a week. These enforced subscriptions engendered the conviction that the subscriber had a right to go to the hospital, and they are indignant when the hospital they pay for is described as a charity. What is compulsory cannot be a charity. The workman who has been forced to subscribe asks whether the gas which burns in the street and for which he is forced to pay rates is also a charity. The impression is gaining ground that the imposition of what is nominally a subscription, but in reality a tax, must tend towards the municipalisation of hospitals, for the voluntary element is dying out. This impression is based on the fact that the workmen's subscription has increased from £132 in 1874, when it was started, to £540 in 1884, to £1000 in 1894, and to £1300 in 1896, that the other subscriptions are declining and now represent less than two-thirds of the total income. The workmen who find themselves compelled to pay will naturally feel resentful against those who do not pay. If the tax were compulsory everywhere, a penny a week on all adult males would bring in about enough to support the hospital without any voluntary subscription whatsoever. So long as a hospital was supported by the subscriptions of a few rich persons it could be justly considered as a gift—a charity; but if a hospital is to be supported, paid for, and maintained by everybody, and if everybody is to have a voice in its management, it is not surprising if some persons think the day is not so far off when such a hospital will be looked upon, not as a private charity, but as public property. There will not then be far to go before reaching the municipalisation of hospitals. Such in any case is the forecast which the present situation at Coventry suggests, and naturally, as the charitable element disappears, the necessity of paying the whole medical staff becomes more and more obvious.

With such large subscriptions coming in from workmen who in many instances believed that by subscribing they acquired a right to go to the hospital, it was to be anticipated that there would be a great deal of hospital abuse. The staff, however, took a wise measure to check such abuse. They decided that the out-patients should be seen only by the

house surgeon and the assistant house surgeon. The out-patients come in the morning. When there is a very serious or complicated case, and a second opinion is thought necessary, the patient has to return in the afternoon and is then seen, in consultation with the house surgeon, by one of the honorary visiting staff. In other towns people throng to the hospitals so as to obtain what they conceive to be superior advice, even though they are often suffering only from some ordinary or trivial complaint. A person who can pay a 2*s.* 6*d.* or 3*s.* 6*d.* fee goes to the hospital so as to obtain advice from a consultant to whom he would have to pay a guinea if he applied to him privately. This cannot be done at Coventry, as advice from the visiting staff is, as already stated, only obtained in exceptional cases. According to another rule, no member of a club or medical aid society can obtain advice at the hospital unless he brings a letter from his club medical officer. In practice this means that a club patient can only come to the hospital for a second opinion. Then even the visiting staff do not enjoy a much higher reputation than the other practitioners of the town, so there is not the rush for superior advice which in larger centres causes much hospital abuse. On the other hand, there is no method of inspection to prevent abuse. The house surgeon is supposed to ask questions, and the former house surgeon did ask a good many questions, with the natural result that he became proportionally unpopular. It is impossible to expect that a young house surgeon, especially if he hopes ultimately to set up in practice, should ask many questions. Thus it amounts to this, that few questions are asked unless a case threatens to become very troublesome, then it is worth while to see whether the patient is justified in coming. Many Coventry patients, however, go to the Birmingham hospitals, though they could well afford to pay the fees of the Coventry practitioners. The tendency of the patients is to go to a large centre. In the smaller provincial towns, where every medical man is a general practitioner, the highest standard of work cannot be so easily attained, and this tends to render hospital abuse less frequent. Perhaps it is more prevalent among the in-patients of the Coventry hospital. To prevent this no one is admitted as an in-patient unless he has six recommendations, whereas one suffices for the out-patients. Even the patients who come with a letter from a medical man are asked to get recommendation tickets as well, and are only admitted without them when the case is very urgent. As, however, three recommendations are given for every guinea subscribed, they are not difficult to obtain, and at the end of the year many subscribers still have unused tickets remaining. The medical staff is opposed to the ticket system, but the workmen want a *quid pro quo* for their subscriptions. The public has been so thoroughly educated to the ticket system that it is thought the subscriptions would be very greatly reduced if the system were abolished. A very few paying patients are admitted, the charge is generally a guinea per week, but I have not heard that this has given rise to any particular complaint. Though I have listened to the bitterest denunciations of the abuse prevailing at the Coventry Provident Dispensary, there is comparatively little said about abuse at the hospital so far as the patients are concerned. The great question at Coventry is the advent of the working men as the preponderating influence in the future of the hospital.

BIRMINGHAM.

(FROM OUR OWN CORRESPONDENT.)

Royal Institution for Deaf and Dumb Children.

THE Royal Institution for Deaf and Dumb Children held its annual meeting on April 9th. The Lord Mayor (Mr. James Smith) presided. The report stated that important extensive alterations had been made during the past year at a cost of £4000. The institution now provided accommodation for 102 boys and 82 girls, the number on the register being 147, which has since increased to nearly the full complement. The balance-sheet showed the total receipts to have been £4483 odd, and this amount had been exceeded in the expenditure by £30 odd. Two-thirds of the amount received from scholars come from the School Board, the Government insisting upon the recognition by the school boards of the deaf and dumb children of the country. Lord Calthorpe was elected president and the usual votes of thanks were passed. The system of education and management of this institution has always received commendation, the school being considered to be one of the best of its kind in the kingdom.

Country Holidays for Town Children.

Sir Willoughby Wade presided at the fourth annual meeting of this useful society on the 11th inst. He pointed out that, with the exception of an infinitesimal expenditure on incidental expenses, all the money contributed was applied directly to the objects for which it was collected. Out of £616 raised last year, the outgoings for incidental expenses only amounted to £34. They could not but recognise what an advantage it was to the health of the children for them to have a free run in the country, and though their visit only extended to a fortnight the effect was not temporary, but lasting. The civilising influence of the holidays was also an important feature. An additional advantage which accrued from the holidays was educational, as the novel surroundings of the children elicited thought and imparted new ideas. A fortnightly holiday was provided at a cost of 11*s.*, including railway fare, but a large amount of labour was given by the ladies who interested themselves in the movement. The Bishop of Coventry was elected president for the ensuing year. It was mentioned that last year the children themselves contributed £208 towards the expenses.

Queen's Hospital.

Dr. Suckling has resigned his position as physician to the hospital after fifteen years' service. It is hoped that he will be elected on the consulting staff, as a recognition of the important and valuable services which he has rendered.

MANCHESTER.

(FROM OUR OWN CORRESPONDENT.)

The Manchester Sewage Problem.

THE difficulties with which Manchester has to contend in the disposal of its sewage were fully set forth at a meeting of the Manchester Statistical Society held on March 31st, when a paper making definite practical suggestions was read by Mr. Nathaniel Bradley, J.P., F.C.S., a member of the city council. At present 26,000,000 gallons of sewage have to be dealt with every day, the effluent from which, after treatment at Davyhulme with chemicals and precipitation, is discharged into a nearly stagnant portion of the Ship Canal. In passing under review the various methods of sewage disposal Mr. Bradley commenced with filtration through land, but dismissed it with the remark that it was out of the question in the case of Manchester, because the necessary quantity of land was not available, and even if it could be obtained it would be of a kind that would be unworkable and probably a source of infection to the whole neighbourhood. The two remaining plans were disposal either by the Ship Canal or by an underground culvert leading to the Mersey where it became tidal. At Davyhulme precipitation was at present effected by the addition of milk of lime, and subsequently by the addition of copperas (protosulphate of iron), about seven grains of each being added to every gallon of sewage. On the present system of sludge pressing and working (without artificial filters) the cost of this treatment averaged £2 2*s.* per million gallons; in London the cost was £2 9*s.* 6*d.* per million gallons. In a report published in 1893 Mr. J. Carter Bell, F.I.C., analyst for the county borough of Salford, gave a description of twenty various sewage processes which were tried at the Salford sewage works, but after four years of experiments not one of them was adopted by the Salford Committee, either because the effluent soon set up secondary putrefaction or because the cost was prohibitive. Notwithstanding reiterated assertions to the contrary, the precipitate from sewage has no commercial value as manure. The Local Government Board in August, 1894, issued a return called for by the House of Commons, containing information on the subject from about 220 districts in England and Wales in which systems of treating sewage by precipitation were in use; 160 of them had no sale whatever for their precipitated sludge; sixty places had a slight sale at prices from 6*d.* to 2*s.* 6*d.* per ton; in two or three places the price was 3*s.* per ton. The filtration of sewage through three feet deep of cinders or finely broken clinkers, weighted

down with a six-inch top layer of gravel, obtained from the State of Massachusetts the name of "bacteriological method," and there was an artificial filter called the septic tank, which was said to purify sewage by means of bacteria and practically to form no sludge. The London County Council constructed such a filter an acre in extent, and their chemist, Mr. Dibdin, made experiments on these bacteriological lines at the northern outfall works at Barking. The Manchester Rivers Committee were also attracted to this bacteriological process and erected two small filters for experiments at Davyhulme. The Corporation of Glasgow had previously sent representatives to various places in England to obtain information, and had had under consideration all the known systems of sewage purification that were of importance. In the light of this knowledge sewage works were opened at Dalmarnock, the eastern district of Glasgow, in May, 1894, capable of dealing with 10,000,000 gallons per day. The buildings, railway sidings, tanks, and filtering beds covered an area of nineteen acres; the land cost £38,000, and the buildings, tanks, and machinery an additional £67,000, or £105,000 in all. This was substantially the so-called bacteriological treatment on an extensive scale, inasmuch as the sewage after precipitation was filtered through cinders and sand. After three years' experience, however, the Glasgow Corporation decided that this filtration was inapplicable in the case of a large community, and they have recently obtained Parliamentary authority for discharging their effluent into the tidal waters of the river Clyde. London also has discontinued the bacteriological filter, and conveys the effluent to the tidal waters of the Thames. Mr Bradley therefore concludes that Manchester will be under the necessity of constructing a culvert leading to the tidal waters of the Mersey.

WESTERN COUNTIES NOTES.

(FROM OUR OWN CORRESPONDENT.)

Bristol.

AT the meeting of the Bedminster (Bristol) board of guardians held on March 23rd it was decided, by 21 votes to 8, that the board should adopt the recommendation of the Royal Commission on Vaccination and allow persons having conscientious objections to vaccination to make a statutory declaration before a magistrate of such objection, and that such a declaration duly made would bar proceedings. One guardian, in opposing the resolution, very wisely remarked that they as a board had no power to adopt such a resolution, as they were there to administer the law as it stood. Unfortunately, however, his advice was not taken.—The new infectious diseases hospital at Ham Green, under the control of the sanitary authority of Bristol, is rapidly approaching completion. It will have four wards and an isolation ward in separate buildings 40 ft. apart. Each of the four wards will contain seventeen beds. The isolation ward is divided into four apartments, with two beds in each. The total cost is about £27,000. The establishment will be lighted by electricity.

The late Dr. Brabazon.

A handsome painted glass window has been recently placed in the Church of St. Mary, Bathwick, as a memorial to the late Dr. Anthony Beaufort Brabazon of Bath, who died in March, 1896. The window is executed in the manner of the fifteenth century, and contains large figures of St. Luke the Evangelist and of SS. Cosmas and Damian, also patron saints of medical men.

Small-pox on Board Ship.

At Cardiff Police-court on March 26th the master of the Norwegian steamship *Parisien* was fined 20*s.* and costs for failing to send notice to the medical officer of health of the Cardiff port sanitary authority that he had on board a person suffering from small-pox.

Death of Mr. J. C. Christison Beddoe.

The particulars of the death of Mr. J. C. C. Beddoe, the only son of Dr. Beddoe, F.R.S., of Bradford-on-Avon, have now reached this country. Mr. Beddoe had an accidental fall amid the Quaebac Hills on Jan. 12th, and died before assistance reached him. He held a responsible position in Major Lugard's African exploring expedition to Lake Ngami. The greatest sympathy is felt for the bereaved parents.

University College of South Wales and Monmouthshire.

A special meeting of the Council of this College was held at Cardiff on March 24th, under the presidency of Dr. Sheen, for the purpose of appointing a professor of anatomy. The three selected candidates appeared before the Council, and eventually Mr. A. Francis Dixon, B.A. Dub., M.B., B.Ch., B.A.O. Trin. Coll., Dub., was appointed to the vacant chair. Professor Dixon has for the past four years held the post of chief demonstrator of anatomy in the University of Dublin; previously he had worked for three years in the zoological laboratories of Trinity College, Dublin, and of the Royal College of Science, Dublin, and obtained the gold medal and senior moderatorship at the examination for B.A. in 1889 at the University of Dublin.

Proposed Cottage Hospital for Chippenham.

It is proposed to commemorate the Queen's Diamond Jubilee at Chippenham by the erection of a cottage hospital. The scheme originated with Sir J. Dickson Poynder, who has subscribed £500 for the purpose. The Mayor will shortly make an appeal for funds, which will doubtless receive a generous response.

Proposed New Hospital for Barry.

The Barry urban district council, at the meeting on April 2nd, decided to recommend to a town's meeting that by way of commemorating the Queen's Jubilee a general hospital should be provided for the town out of the rates, but in the first instance that an accident hospital be erected and also a permanent home for the Barry Nursing Association.

New Convalescent Home at Llanfairfechan.

The Heath Memorial Convalescent Home at Llanfairfechan, North Wales, was opened recently. It has been erected at a cost of about £20,000 by Messrs. Robert James and Arthur Heath, as a memorial to their father, Mr. Robert Heath, the well-known ironmaster.

April 12th.

SCOTLAND.

(FROM OUR OWN CORRESPONDENTS.)

Edinburgh University Graduation Ceremonial.

THE spring graduation ceremonial of the University of Edinburgh took place on the 13th inst. The following well-known gentlemen received the honorary degree of LL.D.: Professor James Dewar, F.R.S., of the Royal Institution, London; Emeritus Professor Sir Douglas Maclagan, F.R.S. Edin.; Mr. John Rae, M.A., of London; the Right Hon. Lord Russell of Killowen, Lord Chief Justice of England; and Mr. John Wyllie, M.D., F.R.C.P. Edin. In presenting Dr. Wyllie the Dean of the Faculty of Law said that he (Dr. Wyllie) had acted for fifteen years as physician to the Royal Infirmary, but Dr. Wyllie's title to the honour which was to be conferred upon him rested mainly upon the remarkable scientific work which he had achieved.

Glasgow Medico-Chirurgical Society.

The April meeting of the society was held on the 2nd inst., the chair being taken by Mr. H. E. Clark. Dr. George H. Edington showed a boy on whom he had performed Excision of the Ankle three years ago for tuberculous disease after several partial operations had failed. The excision was done through a transverse incision extending across the dorsum of the foot from the external to the internal malleolus. The astragalus was removed entirely, the cancellous tissue of the os calcis was scooped out, and a slice taken from the lower end of the tibia and fibula. On two or three subsequent occasions a small sinus in the cicatrix needed attention, but otherwise the result was satisfactory. The boy retains a useful foot, and in walking with his boots on it is impossible to distinguish the affected limb. There is no ankylosis. Dr. Edington also showed a boy whose tarsus had been entirely removed with the exception of a limited portion of the os calcis. The operation was performed eleven months ago, and the boy can now walk with a barely perceptible limp. The foot is much shortened, but there is considerable freedom of movement both between the os calcis and the metatarsus and between the leg bones and the os calcis. In the discussion on these cases there was a general consensus of opinion in favour of partial operation rather than

amputation for tuberculous disease affecting the feet in children, though amputation as securing prompt and certain removal of the entire disease and more rapid healing of the wound was not without its advocates. Dr. Crawford Renton and Dr. Snodgrass submitted notes of a case in which abdominal section was performed for rupture of a gastric ulcer. There were unusual difficulties attending the diagnosis and the operation could not be completed, the explanation, as found on post-mortem examination, being that adhesions between the stomach and the diaphragm rendered access to the ulcer impossible. Dr. Renton also showed a patient on whom he had successfully operated for gastric ulcer. The clinical notes of the case were submitted by Dr. Adamson, who drew attention to the following points: (*a*) the slight degree of shock which was manifested and the rapidity with which evidences of this disappeared, so that it was difficult to convince the patient that an operation was necessary; (*b*) the board-like rigidity of the abdominal wall; (*c*) the diminution of the hepatic dulness without evidence of tympanitic distension of the abdomen; (*d*) the presence of a tinkling sound over the upper abdomen; and (*e*) the complaining of pain—doubtless a referred pain—above the clavicles. Dr. J. H. Nicoll showed the following:—(*a*) two specimens of Paget's Disease of the Nipple; (*b*) the Parts removed from a case of Strangulated Interstitial Inguinal Hernia; (*c*) Vermiform Appendix Removed with an Abscess Cavity containing it; and (*d*) an Encysted Vesical Calculus.

Medical Appointments.

Henry A. Watson, M.A., M.B. Glasg., who has just completed a period of service as house physician in Professor Gairdner's wards in the Watson Infirmary, has been appointed house surgeon to the Royal Hospital for Sick Children, Glasgow.—Geo. A. Turner, M.D. Glasg., has resigned his appointment as physician for Diseases of Women in the Central Dispensary, Glasgow. Dr. Turner was recently elected to the corresponding position in the dispensary of the Watson Infirmary.—Geo. Balfour Marshall, M.B. Edin., has been appointed Government Visitor at the examinations of the Pharmaceutical Society held in Edinburgh, in succession to Sir Douglas Maclagan, M.D., resigned.

April 14th.

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

Royal College of Surgeons in Ireland.

THE Council of the College has nominated Mr. William Thomson (president), Mr. Swan (vice-president), Sir Charles Cameron (secretary), and Sir William Stokes to represent the College at the Moscow International Congress.

The Apothecaries' Hall in Ireland.

The Apothecaries' Hall has recently received from the Privy Council of England notification of the result of its appeal against the decision of the General Medical Council, which body refused to appoint examiners in surgery for the qualification of the Hall. The Privy Council has allowed the appeal and directed the General Medical Council to appoint such examiners.

The Adelaide Hospital, Dublin.

Dr. W. J. Smyly, who has recently finished his term of office as master of the Rotunda Lying-in Hospital, has been elected obstetric surgeon to the Adelaide Hospital, in succession to Dr. Purefoy, the present master of the Rotunda.

Belfast Board of Guardians.

The results of the recent elections just declared show that a lady has been returned at the head of the poll for one of the principal wards of the city.

Londonderry Asylum Board.

The secretary of the board of control in Dublin has intimated to the governors of the Londonderry Asylum that the Treasury have sanctioned a loan of £110,000 for the erection of a new asylum at Gransha for the Londonderry district, the periods of repayment and rate of interest to be as follows: £102,000 in fifteen years, at 3½ per cent. per annum; £7700 in twenty years, at 3½ per cent. per annum.

Death of Professor Townsend of Cork.

The death on the 11th inst. of Dr. Edward Townsend has been the cause of general regret in Cork medical circles. Though suffering from heart disease and aneurysm, he had been actively engaged in his profession within the past fortnight. Educated at Trinity College, Dublin, he graduated in the year 1857, and succeeded his father in a large practice in Cork. He was senior physician to Cork South Infirmary and County Hospital, physician to the Cork Lying-in Hospital, and consulting physician to the Hospital for Protestant Incurables, and in all these institutions his work gained esteem for him. In 1888 he was appointed Professor of Medicine at the Cork Queen's College, and his lectures were much appreciated by the students for their lucidity, erudition, and happy selection of illustrative cases.

April 14th.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

The Academy of Medicine.

THE discussion upon appendicitis was continued last week at the Academy of Medicine, but much of its interest was lost, as nearly all that could be said had been said. M. Potain supported M. Dieulafoy in saying that he, unlike M. Lucas Championnière, M. Reclus, and surgeons in general, had never seen appendicitis as a consequence of enterocolitis. On this question the different surgeons and physicians joined issue, and apparently each intends to retain his personal view. At the same meeting M. Brouardel gave an account of the part that he played at the recent International Sanitary Conference at Venice, and discussed the conclusions that the delegates had arrived at.

The Service Médical de Nuit.

Another, the fifth, Commission of the Municipal Council of Paris has been instituted, on the proposition of M. Fourest, to arrange for the organisation of a gratuitous medical service between the hours of 5 P.M. and 10 P.M. It is well known, on the one hand, that the medical officers of the charity organisations are not obliged to visit the sick after 5 P.M., and, on the other hand, that the *Service Médical de Nuit* only comes into action after 10 P.M. Recent events have called attention to the inconvenience of this interregnum. The same Commission of the Municipal Council has been approached by M. Breuille, who desires a modification of the rules of the service, so that if one district should be overcrowded it should have the right to apply for medical assistance to a less crowded district of the same arrondissement. At the sitting of the municipal council on Monday last M. Edmond Gibert read a report on the petition of a Doctor Da Costa Leite who protested against the situation in which some medical men were placed who had undertaken the duties of the *Service Médical de Nuit*. Dr. Da Costa Leite stated that he had made nineteen night visits during January and up to Feb. 15th inclusive, during which time the new night service had been definitely at work. The new organisation would credit him with 75 fr., which amounted to 3 fr. 95 c. per visit. Dr. Da Costa Leite thought that having accepted the proposals of the Préfecture of the Police that he should guarantee his services during the night in the district where he resided he ought not to be victimised to this extent. It will be remembered that originally the officers of the service received 10 fr. for each visit.

Death of Dr. Maisonneuve.

One of the most illustrious surgeons of the century, Maisonneuve, whom a large number of people thought to be dead, on account of the silence which has shrouded his name for many years past, has just departed this life, aged eighty-seven, at his chateau of Missillac, Loire Inferieure, where he had lived in retirement for the last eight years. Born at Nantes in 1810, Jacques Gilles Maisonneuve became resident medical officer at the Paris hospitals, and afterwards prosector at Clamart. In 1840, after a brilliant *concours*, Maisonneuve was nominated surgeon to the Cochin Hospital. Thence he transferred his services to the Pitié, and finally to the Hôtel Dieu. He soon became noted as the most skilful surgeon of his time, being particularly well known for the number of surgical instruments which he invented, and some of which—for instance, the urethrotome—are still in use under his name. Maisonneuve was the first surgeon to perform the operation of resection of the hip-joint, while his

conservative surgery was as sensational as his operative. In 1862 he showed before the Academy of Medicine the case of a young engineer whose leg he had preserved by the practical application of the physiological theories of Flourens as to the reproduction of bone by the periosteum. In this case he removed the fractured tibia, retaining the periosteum, out of which a new tibia was formed. Since 1875 he had retired from the practice of his profession so entirely that, as I have already said, many even in his own country thought him to be dead.

April 13th.

ROME.

(FROM OUR OWN CORRESPONDENT.)

Inter-Academic Courtesies.

TO-DAY will set out from Milan *en route* for Berlin a company of 350 students and graduates representing every seat of learning in Italy. They are drawn from every faculty, law and medicine preponderating, and are under the guidance of several well-known occupants of university chairs. The medical group, for example, is conducted by Professor Porrando of Genoa and Professor Panzeri and Professor Sormani of Pavia. The trip is organised by the University Association of Pavia, and its object is to afford the renascent schools of Italy an opportunity of witnessing the *modus operandi* pursued at one of the most splendidly equipped and efficiently organised centres of culture, whether theoretical or practical, in Europe. Nothing but good can come of the object lesson thus presented; indeed, its underlying conception and its realisation are among the most hopeful symptoms observable in the evolution of Young Italy. From having been the mother and mistress of modern learning she has lapsed into being the daughter and pupil; but as a first step to regain the ground she has lost she sends a chosen band of her best *alumni* to visit the advanced posts of inductive research and professional qualification, so that on their return these youths may report to their respective schools the impressions they have received and the suggestions they have gathered, with a view to making profitable innovations on their backward traditions. While Berlin is the final goal of the trip, a good many other seats of learning will be visited going or coming—for instance, Zürich, Heidelberg, Cologne, Leipzig, and Munich. In future years these academic excursions will venture further afield, and the universities or provincial schools of the British Isles and the United States are already set down for eventual visits. London has on more than one memorable occasion extended her scientific or professional hospitality to foreign guests, her International Congresses of Hygiene and Demography and of Medicine and Surgery being still quoted as models of what such gatherings should be. These, it is true, she organised for the proficients, or the "past-masters," in science and in its practical application; but when the time comes for the young graduates and advanced students to pay her their contemplated visit she will prove equal, I do not doubt, to her best traditions, and add another to the many pleasant experiences which her Italian guests particularly delight to recall.

"Enlighten the Mothers."

This is the watchword of an organised attempt to realise in Italy the ideal so well formulated by the late eminent Commissioner in Lunacy, Sir James Coxe: "Let every child be taught to become the intelligent custodian of its own health." The Palazzo Gaetani has for some time been the centre of attraction for all interested in the organised attempt aforesaid, Dr. Minossi addressing there considerable audiences, mainly female, on Pronto Soccorso (First Aid), which he handles in a popular yet essentially scientific and practical style. On the medical side of the subject he dealt yesterday with microbic infection, and startled his hearers with the announcement, drawn from official returns, that in Italy 200,000 persons die every year from infective—that is, from preventable—maladies, and that of those victims the majority are young, "the hope of families, the resource of the coming generation." If mothers of households were properly alive to the danger and to the preventability of these maladies, a first step would be taken towards minimising this annual death tribute, and by way of showing what means they may command for such an end Dr. Minossi gave clear and impressive descriptions of the genesis, course, and culmination of the more familiar infective maladies, assisted by preparations which made his meaning unmistakeable. He was effectively supported by representatives of the various cliniques, by numerous consultants, general practitioners and advanced students, and also by well-known leaders of society, all of them in hearty sympathy with the undertaking, of which he is one among its numerous medical promoters.

The Return of Winter in Italy.

The last four months have been peculiarly trying on the Riviera Ponente and even the Riviera Levante, what with rain, occasional snow, and the intermittent sting of the east wind. And now, just as spring was attempting a "transformation scene," winter has again put in an appearance, greatly to the disappointment of visitors to the attractive towns of the Alta Italia and the Italian lakes. On the 9th inst. at Savona a violent storm, accompanied with dense hail showers, burst over the neighbourhood, the hail in some spots lying half a foot deep and doing immense damage to fruit trees in blossom. At Brescia the cold is Siberian, again caused by the heavy hail all over the province; and at Pallanza—"the Nice of the Lago Maggiore," as it is happily called—a correspondent tells me, the climate is once more "that of January," so torrential has been the rainfall, so frequent the snow-storms on the heights, and so piercingly cold the winds. Matters are still worse on the Swiss side of the Alps, where the frost has injured irreparably the fruit trees and vineyards. The travelling Briton should therefore think twice before exchanging the comforts of home for the imprisonment of a sub-Alpine or north Italian hotel.

April 10th.

RUSSIA.

(FROM OUR OWN CORRESPONDENT.)

The X Rays and Anatomical Preparations.

PROFESSOR DIAKONOF[1] discusses the use of the Roentgen rays in preparing photographs, or radiographs, of anatomical preparations. Structures like arteries, veins, bronchi, and broncheoles may be injected with various materials more or less opaque to the x rays, and the resulting radiograph shows with perfect accuracy their relative distribution. The best material for injecting is mercury, on account of the ease with which it can be manipulated and the fact that the same injecting fluid can be used over and over again. When it is wished to inject two sets of vessels in the same organ and to show their distribution in the radiograph mercury may be injected into one set and a still more opaque material into the other. The following mixture is suggested: of gypsum, cinnabar, and red lead, twenty parts each; of flour, ten parts; add enough water to make the mixture sufficiently fluid to flow into the smallest vessels. This mixture is too opaque, and the resulting shadows in the skiagraph too black, to be recommended as a substitute for mercury, but it is useful in combination with it as a contrast.

A Balneological Congress.

It is proposed to hold during the year 1898 a Russian conference upon balneology and climatology. It will be one hundred years next year since the mineral springs of the Caucasus, still the best known and most frequented of Russian spas, were discovered, or, to speak more accurately, since they came to be used therapeutically. The proposal to mark the centenary by holding such a conference originated with the Russian National Health Society, and a committee has been elected to make the necessary arrangements. Foreigners who attend the International Congress in Moscow this summer will have an opportunity, if they can spare the time, of seeing the group of watering-places in the Caucasus just alluded to. A fortnight's tour through the Caucasus, details of which have already appeared in THE LANCET,[2] has been arranged for members of the Congress, and as the itinerary of the tour allows for a stay of two days at Kislovodsk this will permit those who wish to visit Essentuki, Piatigorsk, and Jeleznovodsk, which with Kislovodsk are the most important centres of this great group of springs.

[1] Chirurgia, February, 1897.
[2] THE LANCET, April 3rd, 1897, p. 974.

St. Petersburg and the International Medical Congress.

The town council of St. Petersburg has voted a sum of 5000 roubles (over £500) for expenses in entertaining the members of the International Medical Congress. Part of this sum will probably be spent in the publication of two guides to the city—one general and one medical.

Fatal Fire at an Asylum.

A fire broke out on the evening of March 16th (28th) in a lunatic asylum in the town of Yaroslavl. A ward containing forty female patients was completely destroyed, and three of the patients lost their lives in the flames. The remainder succeeded in escaping.

A Conference on Water supplies.

St. Petersburg might well be termed a city of conferences. A useful one was held here last week to discuss the question of water-supplies to communities. The members were chiefly hygienists, engineers, and municipal representatives, who discussed the different aspects of the main question at a series of meetings prolonged over six days. A new project for the water-supply of St. Petersburg, which is at present admittedly unsatisfactory, was the subject of prolonged debate.

The Cost of Providing for Lunatics.

The municipality of St. Petersburg has voted the sum of 1,000,000 roubles (over £100 000) to the building and maintenance of new lunatic asylums in the capital.

April 12th.

Obituary.

MARK ANTHONY FENTON, M.D. T.C.D., L.R.C.S. IREL., &c.

DR. M. A. FENTON, medical officer of health of Coventry, died at his residence at Coventry on April 6 h. He had been in indifferent health for some time past and was compelled to relinquish his work upon March 27th. Eventually pneumonia developed, from which, although nursed and tended with every care, he was unable to rally. He was educated in Dublin, and his first appointment was that of resident medical officer to the Worcester Dispensary. After this he was appointed house surgeon to the Coventry and Warwickshire Hospital, a post he held for two years, and upon relinquishing it was elected one of the medical officers to the Coventry Dispensary, a position he continued to hold until the day of his death. The chief work of his life, however, and that for which he will ever be gratefully remembered by the citizens of Coventry, was sanitary. Appointed medical officer of health in 1874, at a time when the death-rate was 27 per 1000, Dr. Fenton never rested or spared himself in his efforts to improve the sanitary conditions of the city. How well he succeeded may be judged from the fact that at the time of his decease the death-rate had been reduced to 16 per 1000. A health committee was appointed at his request, isolation of infectious cases when they did occur was thoroughly carried out, and the building of the City Hospital was entirely due to his exertions. In all sanitary matters he was looked to as a leader in the district, and he held the post of President of the Birmingham and Midland Association of Medical Officers of Health; he was also a Fellow of the Society of Medical Officers of Health and medical officer to the City Hospital for Infectious Diseases. He contributed a paper to the *Sanitary Record* for 1880 upon Infantile Mortality, and another to *Public Health* in 1888 upon the Elementary Education Act as a Factor of Infectious Disease. Dr Fenton married in 1874, and leaves a widow and several children.

PTOLEMY SAMUEL HENRY COLMER, M.D. DURH., L.R.C.P. EDIN., L.F.P.S. GLASG., L.S.A.

DR. P. S. H. COLMER of Yeovil died suddenly on April 8th. He had been subject to epileptic attacks for the past year, although with the aid of his son, Mr. P. A. Colmer, he still continued his professional duties. The deceased received his medical education at Anderson's College, Glasgow, and took the qualifications of L.R.C.P. Edin. and L.F.P.S Glasg. in 1862. In 1882 he graduated M.D. of Durham University. Dr. Colmer had an extensive practice, and was highly respected by the inhabitants of Yeovil. He took the greatest interest in all public affairs connected with the town, having been a member of the corporation for over twenty years, and at the time of his death held the position of alderman. He had been mayor of Yeovil on four occasions. He was a borough magistrate, a member of the school board, the board of guardians, and the Somerset County Council. He was an honorary medical officer of the Yeovil District Hospital and surgeon to the majority of the friendly societies in the town. The deceased, who was fifty-six years of age, leaves a widow and several children, for whom much sympathy is felt.

THOMAS CARLYLE BEATTY, M.R.C.S. ENG., L.S.A. LOND.

SEAHAM HARBOUR has sustained a severe loss by the death, at the age of eighty-three years, of Mr. Thomas Carlyle Beatty, who had been for upwards of half a century a much-respected and hard-working practitioner in that town. The deceased was the son of the late Dr. William Snow Beatty of Hull, and was educated at Glasgow University, where he was, like his immediate predecessor and life-long friend Benjamin Ward Richardson, a prizeman in every class. He began practice at Easington, in the county of Durham, but early in 1850 removed to Seaham Harbour, where he obtained the appointment of surgeon to the Marquis of Londonderry's collieries of Seaham and Seaton. He filled all the public appointments and was Admiralty surgeon to the Seaham district for more than forty years. He was a surgeon to the Seaham Harbour Infirmary and Surgeon-Lieutenant-Colonel in the 2nd Durham Artillery Volunteers, having held a commission in this celebrated regiment from the beginning of the Volunteer movement, and he was one of the first Volunteer officers to receive the decoration. At the special request and by the influence of Colonel the Marquis of Londonderry he was enabled to retain his commission long after the usual time for retirement, but a few years ago he felt obliged, owing to failing health, to send in his resignation much to the regret of all the officers of the brigade. Mr. Beatty became deaf early in his career, which probably prevented his attaining that higher eminence in his profession which his distinguished University career and his great ability might have brought within his reach. He, however, had considerable reputation as an able general practitioner. He was a generous friend to the poor, and a great part of the work of his practice was done gratuitously.

Mr. Beatty had been a widower for some years before his death. He leaves two sons, both in practice as medical men, and four daughters, three of whom are married. The funeral took place on April 6th at Seaham Cemetery, and was attended by a large number of relatives and friends.

Medical News.

SOCIETY OF APOTHECARIES OF LONDON.—At the primary examination in April the following candidates passed in the subjects indicated:—

PART I.

Biology.—C. F. Bluett, St. Bartholomew's Hospital; S. F. Hickman and C. Hind, Royal Free Hospital; F. H. Maberly, Birmingham; M. Malcolm, Royal Free Hospital; E. Osborne, Birmingham; H. Richardson, Leeds; and C. M. Scott and M. E. Unwin, Royal Free Hospital.

Materia Medica and Pharmacy.—R. R. P. S. Bowker, Middlesex Hospital; M. E. Fendick, Royal Free Hospital; W. H. Gale and A. H. Gibbon, St. Thomas's Hospital; B. Hogan, London; G. R. Lucas, Edinburgh and St. Bartholomew's Hospital; C. C. Morgan, St. Bartholomew's Hospital; H. Munro, Guy's Hospital; F. Robinson, Royal Free Hospital; J. Welsh, Dublin; H. F. Willington, Manchester; and L. Wright, St. Thomas's Hospital.

PART II.

Anatomy.—H. J. Aldous, King's College Hospital; T. P. Allen, St. Bartholomew's Hospital; W. Asten, Birmingham; E. O. Balleine and A. St. J. Bateman, King's College Hospital; A. P. Carlyon, Middlesex Hospital; E. L. D. Dewdney, King's College Hospital; M. E. Fendick, Royal Free Hospital; C. Fisher, St. Bartholomew's Hospital; J. S. Goodall, Middlesex Hospital; J. B. Griffith, St. Bartholomew's Hospital; H. M. Hardy, Guy's Hospital; R. J. Harris, St. Thomas's Hospital; W. G. Hopkins, St. Mary's Hospital; F. A. Hort, Cambridge; D. Jeaffreson, St. Bartholomew's Hospital; H. Jessop, Birmingham; J. McClintock, King's College Hospital; C. J. Marsh, University College; E. R. Miliar, University College

conservative surgery was as sensational as his operative. In 1862 he showed before the Academy of Medicine the case of a young engineer whose leg he had preserved by the practical application of the physiological theories of Flourens as to the reproduction of bone by the periosteum. In this case he removed the fractured tibia, retaining the periosteum, out of which a new tibia was formed. Since 1875 he had retired from the practice of his profession so entirely that, as I have already said, many even in his own country thought him to be dead.

April 13th.

ROME.

(FROM OUR OWN CORRESPONDENT.)

Inter-Academic Courtesies.

TO-DAY will set out from Milan *en route* for Berlin a company of 350 students and graduates representing every seat of learning in Italy. They are drawn from every faculty, law and medicine preponderating, and are under the guidance of several well-known occupants of university chairs. The medical group, for example, is conducted by Professor Porrando of Genoa and Professor Panzeri and Professor Sormani of Pavia. The trip is organised by the University Association of Pavia, and its object is to afford the renascent schools of Italy an opportunity of witnessing the *modus operandi* pursued at one of the most splendidly equipped and efficiently organised centres of culture, whether theoretical or practical, in Europe. Nothing but good can come of the object lesson thus presented; indeed, its underlying conception and its realisation are among the most hopeful symptoms observable in the evolution of Young Italy. From having been the mother and mistress of modern learning she has lapsed into being the daughter and pupil; but as a first step to regain the ground she has lost she sends a chosen band of her best *alumni* to visit the advanced posts of inductive research and professional qualification, so that on their return these youths may report to their respective schools the impressions they have received and the suggestions they have gathered, with a view to making profitable innovations on their backward traditions. While Berlin is the final goal of the trip, a good many other seats of learning will be visited going or coming—for instance, Zürich, Heidelberg, Cologne, Leipzig, and Munich. In future years these academic excursions will venture further afield, and the universities or provincial schools of the British Isles and the United States are already set down for eventual visits. London has on more than one memorable occasion extended her scientific or professional hospitality to foreign guests, her International Congresses of Hygiene and Demography and of Medicine and Surgery being still quoted as models of what such gatherings should be. These, it is true, she organised for the proficients, or the "past-masters," in science and in its practical application; but when the time comes for the young graduates and advanced students to pay her their contemplated visit she will prove equal, I do not doubt, to her best traditions, and add another to the many pleasant experiences which her Italian guests particularly delight to recall.

"Enlighten the Mothers."

This is the watchword of an organised attempt to realise in Italy the ideal so well formulated by the late eminent Commissioner in Lunacy, Sir James Coxe: "Let every child be taught to become the intelligent custodian of its own health." The Palazzo Gaetani has for some time been the centre of attraction for all interested in the organised attempt aforesaid, Dr. Minossi addressing there considerable audiences, mainly female, on Pronto Soccorso (First Aid), which he handles in a popular yet essentially scientific and practical style. On the medical side of the subject he dealt yesterday with microbic infection, and startled his hearers with the announcement, drawn from official returns, that in Italy 200,000 persons die every year from infective—that is, from preventable—maladies, and that of those victims the majority are young, "the hope of families, the resource of the coming generation." If mothers of households were properly alive to the danger and to the preventability of these maladies, a first step would be taken towards minimising this annual death tribute, and by way of showing what means they may command for such an end Dr. Minossi gave clear and impressive descriptions of the genesis, course, and culmination of the more familiar infective maladies, assisted by preparations which made his meaning unmistakeable. He was effectively supported by representatives of the various cliniques, by numerous consultants, general practitioners and advanced students, and also by well-known leaders of society, all of them in hearty sympathy with the undertaking, of which he is one among its numerous medical promoters.

The Return of Winter in Italy.

The last four months have been peculiarly trying on the Riviera Ponente and even the Riviera Levante, what with rain, occasional snow, and the intermittent sting of the east wind. And now, just as spring was attempting a "transformation scene," winter has again put in an appearance, greatly to the disappointment of visitors to the attractive towns of the Alta Italia and the Italian lakes. On the 9th inst. at Savona a violent storm, accompanied with dense hail showers, burst over the neighbourhood, the hail in some spots lying half a foot deep and doing immense damage to fruit trees in blossom. At Brescia the cold is Siberian, again caused by the heavy hail all over the province; and at Pallanza—"the Nice of the Lago Maggiore," as it is happily called—a correspondent tells me, the climate is once more "that of January," so torrential has been the rainfall, so frequent the snow-storms on the heights, and so piercingly cold the winds. Matters are still worse on the Swiss side of the Alps, where the frost has injured irreparably the fruit trees and vineyards. The travelling Briton should therefore think twice before exchanging the comforts of home for the imprisonment of a sub-Alpine or north Italian hotel.

April 10th.

RUSSIA.

(FROM OUR OWN CORRESPONDENT.)

The X Rays and Anatomical Preparations.

PROFESSOR DIAKONOF[1] discusses the use of the Roentgen rays in preparing photographs, or radiographs, of anatomical preparations. Structures like arteries, veins, bronchi, and broncheoles may be injected with various materials more or less opaque to the x rays, and the resulting radiograph shows with perfect accuracy their relative distribution. The best material for injecting is mercury, on account of the ease with which it can be manipulated and the fact that the same injecting fluid can be used over and over again. When it is wished to inject two sets of vessels in the same organ and to show their distribution in the radiograph mercury may be injected into one set and a still more opaque material into the other. The following mixture is suggested: of gypsum, cinnabar, and red lead, twenty parts each; of flour, ten parts; add enough water to make the mixture sufficiently fluid to flow into the smallest vessels. This mixture is too opaque, and the resulting shadows in the skiagraph too black, to be recommended as a substitute for mercury, but it is useful in combination with it as a contrast.

A Balneological Congress.

It is proposed to hold during the year 1898 a Russian conference upon balneology and climatology. It will be one hundred years next year since the mineral springs of the Caucasus, still the best known and most frequented of Russian spas, were discovered, or, to speak more accurately, since they came to be used therapeutically. The proposal to mark the centenary by holding such a conference originated with the Russian National Health Society, and a committee has been elected to make the necessary arrangements. Foreigners who attend the International Congress in Moscow this summer will have an opportunity, if they can spare the time, of seeing the group of watering-places in the Caucasus just alluded to. A fortnight's tour through the Caucasus, details of which have already appeared in THE LANCET,[2] has been arranged for members of the Congress, and as the itinerary of the tour allows for a stay of two days at Kislovodsk this will permit those who wish to visit Essentuki, Piatigorsk, and Jeleznovodsk, which with Kislovodsk are the most important centres of this great group of springs.

[1] Chirurgia, February, 1897.
[2] THE LANCET, April 3rd, 1897, p. 974.

St. Petersburg and the International Medical Congress.

The town council of St. Petersburg has voted a sum of 5000 roubles (over £500) for expenses in entertaining the members of the International Medical Congress. Part of this sum will probably be spent in the publication of two guides to the city—one general and one medical.

Fatal Fire at an Asylum.

A fire broke out on the evening of March 16th (28th) in a lunatic asylum in the town of Yaroslavl. A ward containing forty female patients was completely destroyed, and three of the patients lost their lives in the flames. The remainder succeeded in escaping.

A Conference on Water supplies.

St. Petersburg might well be termed a city of conferences. A useful one was held here last week to discuss the question of water-supplies to communities. The members were chiefly hygienists, engineers, and municipal representatives, who discussed the different aspects of the main question at a series of meetings prolonged over six days. A new project for the water-supply of St. Petersburg, which is at present admittedly unsatisfactory, was the subject of prolonged debate.

The Cost of Providing for Lunatics.

The municipality of St. Petersburg has voted the sum of 1,000,000 roubles (over £100 000) to the building and maintenance of new lunatic asylums in the capital.

April 12th.

Obituary.

MARK ANTHONY FENTON, M.D. T.C.D., L.R.C.S. IREL., &c.

DR. M. A. FENTON, medical officer of health of Coventry, died at his residence at Coventry on April 6 h. He had been in indifferent health for some time past and was compelled to relinquish his work upon March 27 h. Eventually pneumonia developed, from which, although nursed and tended with every care, he was unable to rally. He was educated in Dublin, and his first appointment was that of resident medical officer to the Worcester Dispensary. After this he was appointed house surgeon to the Coventry and Warwickshire Hospital, a post he held for two years, and upon relinquishing it was elected one of the medical officers to the Coventry Dispensary, a position he continued to hold until the day of his death. The chief work of his life, however, and that for which he will ever be gratefully remembered by the citizens of Coventry, was sanitary. Appointed medical officer of health in 1874, at a time when the death-rate was 27 per 1000, Dr. Fenton never rested or spared himself in his efforts to improve the sanitary conditions of the city. How well he succeeded may be judged from the fact that at the time of his decease the death-rate had been reduced to 16 per 1000. A health committee was appointed at his request, isolation of infectious cases when they did occur was thoroughly carried out, and the building of the City Hospital was entirely due to his exertions. In all sanitary matters he was looked to as a leader in the district, and he held the post of President of the Birmingham and Midland Association of Medical Officers of Health; he was also a Fellow of the Society of Medical Officers of Health and medical officer to the City Hospital for Infectious Diseases. He contributed a paper to the *Sanitary Record* for 1880 upon Infantile Mortality, and another to *Public Health* in 1888 upon the Elementary Education Act as a Factor of Infectious Disease. Dr Fenton married in 1874, and leaves a widow and several children.

PTOLEMY SAMUEL HENRY COLMER, M.D. DURH., L.R.C.P. EDIN., L.F.P.S. GLASG., L.S.A.

DR. P. S. H. COLMER of Yeovil died suddenly on April 8th. He had been subject to epileptic attacks for the past year, although with the aid of his son, Mr. P. A. Colmer, he still continued his professional duties. The deceased received his medical education at Anderson's College, Glasgow, and took the qualifications of L.R.C.P. Edin. and L.F.P.S Glasg. in 1862. In 1882 he graduated M.D. of Durham University. Dr. Colmer had an extensive practice, and was highly respected by the inhabitants of Yeovil. He took the greatest interest in all public affairs connected with the town, having been a member of the corporation for over twenty years, and at the time of his death held the position of alderman. He had been mayor of Yeovil on four occasions. He was a borough magistrate, a member of the school board, the board of guardians, and the Somerset County Council. He was an honorary medical officer of the Yeovil District Hospital and surgeon to the majority of the friendly societies in the town. The deceased, who was fifty-six years of age, leaves a widow and several children, for whom much sympathy is felt.

THOMAS CARLYLE BEATTY, M.R.C.S. ENG., L.S.A. LOND.

SEAHAM HARBOUR has sustained a severe loss by the death, at the age of eighty-three years, of Mr. Thomas Carlyle Beatty, who had been for upwards of half a century a much-respected and hard-working practitioner in that town. The deceased was the son of the late Dr. William Snow Beatty of Hull, and was educated at Glasgow University, where he was, like his immediate predecessor and life-long friend Benjamin Ward Richardson, a prizeman in every class. He began practice at Easington, in the county of Durham, but early in 1850 removed to Seaham Harbour, where he obtained the appointment of surgeon to the Marquis of Londonderry's collieries of Seaham and Seaton. He filled all the public appointments and was Admiralty surgeon to the Seaham district for more than forty years. He was a surgeon to the Seaham Harbour Infirmary and Surgeon-Lieutenant-Colonel in the 2nd Durham Artillery Volunteers, having held a commission in this celebrated regiment from the beginning of the Volunteer movement, and he was one of the first Volunteer officers to receive the decoration. At the special request and by the influence of Colonel the Marquis of Londonderry he was enabled to retain his commission long after the usual time for retirement, but a few years ago he felt obliged, owing to failing health, to send in his resignation much to the regret of all the officers of the brigade. Mr. Beatty became deaf early in his career, which probably prevented his attaining that higher eminence in his profession which his distinguished University career and his great ability might have brought within his reach. He, however, had considerable reputation as an able general practitioner. He was a generous friend to the poor, and a great part of the work of his practice was done gratuitously.

Mr. Beatty had been a widower for some years before his death. He leaves two sons, both in practice as medical men, and four daughters, three of whom are married. The funeral took place on April 6th at Seaham Cemetery, and was attended by a large number of relatives and friends.

Medical News.

SOCIETY OF APOTHECARIES OF LONDON.—At the primary examination in April the following candidates passed in the subjects indicated:—

PART I.

Biology.—C. F. Bluett, St. Bartholomew's Hospital; S. F. Hickman and C. Hind, Royal Free Hospital; F. H. Maberly, Birmingham; M. Malcolm, Royal Free Hospital; E. Osborne, Birmingham; H. Richardson, Leeds; and C. M. Scott and M. E. Unwin, Royal Free Hospital.

Materia Medica and Pharmacy.—R. R. P. S. Bowker, Middlesex Hospital; M. B. Fendick, Royal Free Hospital; W. H. Gale and A. H. Gibbon, St. Thomas's Hospital; B. Hogan, London; G. R. Lucas, Edinburgh and St. Bartholomew's Hospital; C. C. Morgan, St. Bartholomew's Hospital; H. Munro, Guy's Hospital; F. Robinson, Royal Free Hospital; J. Welsh, Dublin; H. F. Willington, Manchester; and L. Wright, St. Thomas's Hospital.

PART II.

Anatomy.—H. J. Aldous, King's College Hospital; T. P. Allen, St. Bartholomew's Hospital; W. Asten, Birmingham; E. O. Balleine and A. St. J. Bateman, King's College Hospital; A. F. Carlyon, Middlesex Hospital; E. L. D. Dewdney, King's College Hospital; M. E. Fendick, Royal Free Hospital; C. Fisher, St. Bartholomew's Hospital; J. S. Goodall, Middlesex Hospital; J. B. Griffith, St. Bartholomew's Hospital; H. M. Hardy, Guy's Hospital; R. J. Harris, St. Thomas's Hospital; W. G. Hopkins, St. Mary's Hospital; F. A. Hort, Cambridge; D. Jeaffreson, St. Bartholomew's Hospital; H. Jessop, Birmingham; J. McClintock, King's College Hospital; C. J. Marsh, University College; E. R. Millar, University College

Hospital; H. E. Morris, Guy's Hospital; F. Robinson, Royal Free Hospital; H. Smith, Birmingham; A. C. S. Waters, Cambridge; J. Welsh, Dublin; B. B. Westlake, Guy's Hospital; H. E. Weston, St. George's Hospital; A. H. Wilson, Birmingham; J. P. Woodhouse, Liverpool and Durham; and T. Young, St. Bartholomew's Hospital.

Physiology.—M. A. Alabone, Guy's Hospital; H. J. Aldous, King's College Hospital; T. P. Allen, St. Bartholomew's Hospital; A. St. J. Bateman, King's College Hospital; S. F. Cheesman and C. E. C. Child, Charing-cross Hospital; H. H. Cotman, Aberdeen; M. B. Dawson, Middlesex Hospital; M. E. Fendick, Royal Free Hospital; C. Fisher, St. Bartholomew's Hospital; J. S. Goodall, Middlesex Hospital; W. H. Goodchild and J. E. Griffith, St. Bartholomew's Hospital; H. M. Hardy, Guy's Hospital; R. J. Harris, St. Thomas's Hospital; W. G. Hopkins, St. Mary's Hospital; D. Jeaffreson, St. Bartholomew's Hospital; H. Jessop, Birmingham; J. McClintock, King's College Hospital; E. R. Millar, University College Hospital; H. E. Morris, Guy's Hospital; R. C. Morris, Birmingham; D. V. Moller, Charing-cross Hospital; W. A. Pitt, Edinburgh; C. V. Smith, University College Hospital; H. Smith, Birmingham; A. C. S. Waters, Cambridge; J. Welsh, Dublin; B. B. Westlake, Guy's Hospital; H. E. Weston, St. George's Hospital; A. H. Wilson, Birmingham; W. R. Wilson, Dublin and Belfast; and T. Young, St. Bartholomew's Hospital.

UNIVERSITY OF DURHAM: FACULTY OF MEDICINE.—At the First Examination for the degree of Bachelor in Medicine at the College of Medicine, Newcastle-upon-Tyne, in April, the following candidates satisfied the examiners in the subjects indicated:—

OLD REGULATIONS.

Chemistry with Chemical Physics.—Robert Tilbury Brown, M.R.C.S., L.R.C.P., and Gerald Burton Brown, L.S.A., Guy's Hospital; Gilbert Smith, M.R.C.S., L.R.C.P., St. Bartholomew's Hospital; John Henry Tripe, London Hospital; Thomas John Augustus Tulk-Hart, M.R.C.S., L.R.C.P., Guy's Hospital; and Percy Edward Turner, M.R.C.S., L.R.C.P., St. Bartholomew's Hospital.

NEW REGULATIONS.

Elementary Anatomy and Biology, Chemistry, and Physics.—Second-class Honours: James Willie Heslop, College of Medicine, Newcastle-upon-Tyne. *Pass List:* Robert Story Brown and George Burrows Brown, College of Medicine, Newcastle-upon-Tyne; Howard Payne Fox, Cooke's School of Anatomy; and Charles William Turner and Frederick Percy Wigfield, College of Medicine, Newcastle-upon-Tyne.

Chemistry and Physics.—Annie Tombleson Brunyate, London School of Medicine for Women; Bernard Edward Granville Bailey, St. Bartholomew's Hospital; Frederick Clarkson and Samuel Thomas Cochrane, College of Medicine, Newcastle-upon-Tyne; William Claughton Douglass, St. Bartholomew's Hospital; Albert Ernest Hodge, College of Medicine, Newcastle-upon-Tyne; Evan Llewellyn Jenkins, Cooke's School of Anatomy; William Pattullo, Edinburgh School of Medicine; Stanley Raw, College of Medicine, Newcastle-upon-Tyne; Leonard Satchwell Smith, Mason College, Birmingham; and William Waters Stainthorpe, Ralph Thomas Vaux, and Frederick George Wilson, College of Medicine, Newcastle-upon-Tyne.

Anatomy and Biology.—Alice Maud Dodd, London School of Medicine for Women; James Farrage, College of Medicine, Newcastle-upon-Tyne; Ida Emilee Fox and Chella Mary Hankin, London School of Medicine for Women; Frederick Percy Joscelyne, Yorkshire College, Leeds; Guy Hannah Kirby, Mason College, Birmingham; Florence Dyer Durell Ledgard, London School of Medicine for Women; Michael Joseph Quirke, Mason College, Birmingham; and Hugh Widdas, College of Medicine, Newcastle upon-Tyne.

Elementary Anatomy, Chemistry, and Physics.—Mary Jane D'Vaz, London School of Medicine for Women, and David Henry Jeavons Kirton, Mason College, Birmingham.

Elementary Anatomy.—Otto Charles Henry Leopold Moll, Guy's Hospital, and Theophilus William Morcom, London Hospital.

PROPOSED KURSAAL FOR CHELTENHAM.—At a meeting of the Cheltenham Town Council held on April 5th, Mr. Ward-Humphreys, M.R.C.S. Eng., L.R.C.P. Lond., introduced a scheme for the demolition, or at least the removal, of the glass and brick structure of the present Winter Garden, and the erection of a kursaal and municipal buildings on the site at a cost of £48,000. After a lengthy discussion the plans were passed.

LITERARY INTELLIGENCE.—Messrs. Rivington, Percival, and Co. announce for early publication a small volume entitled "Some Aspects of Infantile Syphilis," being the Hunterian lectures delivered at the Royal College of Surgeons of England in 1896, by J. A. Coutts, M.B. Cantab., M.R.C.P. Lond., physician to the East London Hospital for Children.—The first number of a new Portuguese medical journal, entitled *Archivos de Medicina*, has reached us. It is edited by Dr. Camera Pestana, of Lisbon, and is to appear on the 25th of every month. The issue before us contains original articles on the Diagnosis of Diphtheria and on Malarial Psychoses, and some reviews; also a table of the results of anti-diphtheritic serum treatment during January from the Lisbon Bacteriological Institute, there being only two deaths in nineteen cases.—Mr. Grant Richards announces the publication of a series of portraits by Mr. Will Rothenstein of literary and artistic persons.

MERTHYR TYDVIL GENERAL HOSPITAL.—Lord Wimborne has promised a donation of £1000 towards the Diamond Jubilee Ward of this hospital.

MR. ODED LOWSLEY, public vaccinator of the Reading district, has just received from the Local Government Board the sum of £101 2*s.*, as an award for efficient vaccination.

TAUNTON NURSING ASSOCIATION.—At the annual meeting of the Taunton Nursing Association which was recently held it was stated that 941 cases had been treated during 1896, necessitating nearly 16,000 visits. The maternity branch had dealt with 258 cases.

ST. JOHN AMBULANCE SOCIETY.—Mr. Hermann Rogers-Tillstone, M.D., C.M. Aberd., of Clevedon, Somerset, has been elected a life member of the St. John Ambulance Society in recognition of his services in delivering gratuitous courses of lectures on "First Aid" and "Nursing."

CHARING-CROSS HOSPITAL.—A meeting of the Special Appeal Committee of Charing-cross Hospital was held in the board-room on April 11th. Donations amounting to £23,450 were announced, including £1000 to endow a bed from a patient of Dr. Travers, of 2, Phillimore-gardens, Kensington.

BRISTOL MEDICAL MISSIONARY SOCIETY.—The annual meeting of this society was held on March 23rd. The report showed that 7252 patients had been treated at the mission, the attendances numbering 22,793, and that 1506 patients were visited at their homes. The honorary secretary stated that additional funds were needed, for the ordinary contributions were from £130 to £150 below the ordinary expenditure.

HOSPITAL SATURDAY AT BRISTOL.—At a meeting of the Bristol Joint Hospitals Committee it was decided that in anticipation of the numerous demands to be made upon the purses of the public during the year of Her Majesty's Diamond Jubilee, the committee will suspend the street collections for the current year, but they hope to receive contributions from organisations and individuals who may be disposed to assist the funds of the local medical charities. The ladies and other helpers of last year will be requested to continue their good offices on future occasions.

HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST.—The committee of the Hospital for Consumption and Diseases of the Chest, Brompton, have issued an appeal for a sum of £20,000 to be employed in providing a country branch in connexion with the hospital. It is hoped that a suitable site may be given free of cost by some benevolent person, and the committee's proposal is to erect separate cottage buildings, each of which will accommodate ten or twelve patients, with probably a separate bedroom for each, and also with apartments for the attendants. An endeavour will be made to obtain Her Majesty's permission to call the new branch "The Victoria (Country) Branch of the Brompton Hospital for Consumption." Contributions may be sent either to the treasurer, Mr. W. S. Deacon, 20, Birchin-lane, or to the secretary, Mr. W. H. Theobald, at the Hospital, Fulham-road, S.W.

ROYAL COLLEGE OF SURGEONS IN IRELAND.—The following is the prize list for the winter session 1896–97:—Descriptive Anatomy—Junior: J. F. Peart, first; W. R. Meredith, second. Senior (two prizes): J. S. P. Stewart and Miss F. A. Dreaper, first; J. S. P. Stewart and Miss F. A. Dreaper, second. Practical Anatomy—First year: A. S. Ellenbogen, first; J. F. Peart, second. Second year: J. S. P. Stewart, first; Miss F. A. Dreaper, second. Third year: G. W. Little, first; J. M. M. Crawford, second. Practice of Medicine: D. A. Fitzgerald, first; S. R. Godkin, second. Theoretical Surgery: A. S. Green, first; F. J. Palmer, second. Midwifery: F. J. Palmer, first; D. Hadden, second. Physiology: J. S. P. Stewart, first; Mrs. H. L. Hennessy, second. Theoretical Chemistry: J. P. Byrne, first; J. P. O'Donnell, second. Pathology: W. H. May, first; P. H. Falkner, second. Physics: E. Glenny, first; S. Gordon, second. The summer session commenced on Thursday, April 1st, for the three months' course of operative surgery, practical chemistry, histology, pharmacy, public health and forensic medicine, materia medica, biology, and uncertified dissections.

FOOTBALL CASUALTY.—On Saturday last, in a match between Batley and Widnes, one of the visiting team of players had his right leg "fractured, or dislocated near the ankle," and was carried off the field.

PRESENTATIONS TO MEDICAL MEN.—The following gentlemen have been the recipients of presents for honorary instruction given to their respective ambulance classes, namely: Mr. Francis Ward, M.B., C.M. Edin., senior house surgeon at the Ipswich and East Suffolk Hospital, from the Orwell Works ambulance class, a handsome silver "Tantalus," bearing a suitable inscription; Mr. James Adamson, M.D. Glasg., of Hetton-le-Hole, Durham, from the ambulance classes at Hetton-le-Hole, an electro-plated tureen and vegetable dish; and Mr. John J. Adams, M.D.R.U.I., of Ashville, Antrim, from the St. John Ambulance Class, Antrim, a silver cigar-case, cigarette-case, and a match-box.—Mr. C. St. John Wright, M.B., C.M. Aberd., M.R.C.S. Eng., on his resignation of the office of medical superintendent of the infirmary and medical officer of the workhouse of St. Mary's, Islington, after fifteen years' service, received on March 25th in the board-room an illuminated testimonial on vellum, framed, from the guardians, justices of the peace, and in-door and out-door officers, as a mark of the respect in which he was held by all with whom he was officially associated. The address states that a silver candelabrum was at the same time presented to Dr. Wright. This is a magnificent piece of plate of solid silver with four branches, and bears an inscription round the base stating the facts and dates of Dr. Wright's long connexion with the infirmary and the workhouse.—Mr. John Sutherland, M.B., C.M. Edin., of Netherfield, Nottingham, has received the gift of a travelling bag from the members of the Colwick Branch of the St. John Ambulance Association as a token of appreciation of his First Aid instructions.—In the course of a musical entertainment at the Recreation Hall of the Melton Asylum, Suffolk, on the 27th ult., which was well attended by the patients, staff, and several visitors, Mr. W. Eager, L.R.C.P. Lond., M.R.C.S. Eng., the resident physician and superintendent of the asylum, who is leaving after many years' service, was presented with a solid silver salver and a silver tea-service. The salver was the gift of the present staff, and the tea-service of the past officers, of the asylum.—Mr. George Black, M.B., B.S. Lond. of Hurstpierpoint, Hassocks, Sussex, has received the present of a handsome walking stick as an acknowledgment of his gratuitous lectures to the Hurst Ambulance Classes.—At the recent grand *finale* in connexion with the Fraserburgh Mutual Improvement Association, held in Dalrymple, Mr. Archibald Dingwall, M.B., C.M. Aberd., past president of the association, was presented with an illuminated address on the occasion of his leaving Fraserburgh. An honorary life-membership of the society was at the same time conferred upon him.—Mr. T. Carson Fisher, M.D. Dub., and Mr. William G. Armstrong, M.B. Syd., D.P.H. Camb., medical officers of the Berrima District Hospital, New South Wales, have each been presented with an honorarium of 25 guineas.

Parliamentary Intelligence.

NOTES ON CURRENT TOPICS.

Midwives Registration Bill.

AN attempt was made after midnight on Thursday, April 8th, to obtain a second reading for the Midwives Registration Bill, but it failed, and the order was put down again for Monday, May 3rd.

Irish Poor Relief Bill.

The Bill to amend the law in Ireland with regard to the relief of the destitute poor was formally introduced on Thursday, April 8th, by Mr. Gerald Balfour, Chief Secretary to the Lord-Lieutenant.

Removal of Bodies.

In view of the Committee stage of the Public Health (Scotland) Bill an amendment has been drawn up by Mr. Caldwell, proposing that it shall not be lawful to transport the body of any person who has died from an infectious disease by railway or other public conveyance, not being a conveyance reserved for such purpose, unless and until the medical officer has certified that every precaution necessary for the public safety has been adopted to his satisfaction.

HOUSE OF COMMONS.

WEDNESDAY, APRIL 7TH.

Marking of Foreign Meat.

This sitting of the House was occupied with a second reading debate upon a measure for the marking of foreign meat and cheese, and for the registration of persons who deal in these commodities. The Bill differs from the measure of last session in several respects, but notably in this, that it does not propose that small sections of meat and cheese should be marked, but only carcasses, or sides, or hams, or the rinds of cheese. In the course of the debate an hon. Member put forward the idea that frozen meat was a cause of cancer, but Dr. Farquharson assured him and the House that any such apprehension was entirely out of the question. The Bill was read a second time and referred to a Select Committee.

THURSDAY, APRIL 8TH.

The Army Medical Service.

Captain Norton asked the Under Secretary of State for War whether the Army Medical Service was at the present time sufficient, not only for mobilisation, but for medical military needs at home and abroad, and, if not, whether any steps were being taken to increase the staff.—Mr. Brodrick replied that the establishment of officers of the medical staff was about forty under strength. Measures to make good this deficiency were now under consideration.

Mr. Bartley asked whether it was not the case that the officers on the retired list were as numerous as those on the active list, and whether steps would be taken to remedy this state of things.—Mr. Brodrick said that the officers on the retired list were employed on the home service, and there were complaints in consequence that the officers on the active list were debarred from employment on the home stations.

The Troops in India.

Captain Pirie asked the Secretary of State for India what steps, if any, had been taken to carry out the urgent recommendation of the Sanitary Commissioner with the Government in India, in his report for 1894, which was also quoted with approval in the Report on Sanitary Measures in India in 1894-5, that much might be done to diminish the extent and severity of contagious diseases among the British troops in India by providing increased facilities for bathing with comfort and convenience in private and public baths, and by inculcating habits of personal cleanliness among the troops.—Lord George Hamilton replied that he had received no special report as to the action taken on representations made by the Sanitary Commission in 1894, but he understood that in the opinion of the military authorities ample provision was made for supplying British soldiers in India with the means of personal cleanliness. The importance of the matter was so well understood in India that it would hardly be necessary to call for any special report.

Oysters in Relation to Disease.

Sir William Priestley asked the President of the Local Government Board whether, in view of the report published last year concerning oyster culture in relation to disease and the diminished consumption of oysters which had resulted therefrom, he proposed to have oyster beds regularly inspected, or to adopt such other measures as would give the public a reasonable assurance that oysters in the market were derived from healthy sources and not likely to be the cause of disease.—Mr. Chaplin replied that the subject of this question was one of great importance. It presented, however, many difficulties. The inspection of the oyster beds in this country would not in itself secure the result suggested, and the question had to be considered in connexion with oysters imported from abroad as well as those obtained from English beds. Any scheme to be effective would require legislation, but the subject was receiving his careful consideration.—Sir William Priestley asked whether in localities where oyster beds and pits had been certified to be contaminated by sewage any steps would be taken to improve their condition.—Mr. Chaplin replied that without notice of the question he could not say what steps were or were not to be taken by local authorities.

Verminous Persons Bill.

At this sitting the Bill conferring powers as to the cleansing of verminous persons was read a second time.

MONDAY, APRIL 12TH.

Relief for Army Medical Officers.

Dr. Farquharson asked the Under Secretary of State for War whether, seeing how short-handed the Army Medical Department was at home, and the difficulty of getting leave, he would arrange some system of relief, so as to enable medical officers to obtain relief according to regulations.—Mr. Powell Williams, who replied for the Under Secretary, said he was happy to be able to inform the hon. Member that arrangements were in progress which it was hoped would afford greater facilities to military medical officers for obtaining leave.

BOOKS, ETC., RECEIVED.

APPLETON, D., AND COMPANY, New York.

The Journal of Experimental Medicine. Edited by W. H. Welch M.D., Baltimore. Vol. II., No. 2. March, 1897.

ASH PARTNERS, 36, St. Martin's-lane, London.

Zalma. By T. Mullet Ellis. Illustrated. 1897.

CHAPMAN AND HALL, London.

English Sonnets. Edited, with Introduction and Notes, by A. T Quiller-Couch. 1897.

CHURCHILL, J. & A., Great Marlborough-street, London.

St. Thomas's Hospital Reports. New Series. Vol. XXIV 1897. Price 8s. 6d.

BAILLIÈRE ET FILS, Paris.
Formulaire des Médicaments Nouveaux pour 1897. Par H. Bocquillon-Limousin. 1897.

BALE, JOHN, AND SONS, Great Titchfield-street, London, W.
A Manual of Medical Exercises. By Dr. Percy Lewis. 1897. Price 2s.

CLOWES, WM., AND SONS, Charing-cross, London.
Sanitation and Health. By Brigade-General R. C. Hart, V.C. Revised by Brigade-Surgeon-Lieutenant-Colonel T. H. Hendley, C.I.E., M.R.C.S., L.R.C.P. Third Edition. 1897. Price 1s. 6d.

HIRSCHWALD, AUGUST, Berlin.
Specielle Diätetik und Hygiene des Lungen- und Kehlkopf-Schwindsuchtigen. Von Dr. F. Blumenfeld. 1897.
Casuistische Beitrage zur Forensischen Psychiatrie. Von Dr. B. Siemerling. 1897.
Encyklopädie der Therapie. Von O. Liebreich. Zweiter Band. 1897.

JARROLD AND SONS, Warwick-lane, London.
The Idiot: His Place in Creation and his Claims on Society. By Sir Fred. Bateman, M.D., LL.D. Second Edition. 1897.

KIMPTON, HENRY, High Holborn, London, W.C.
Practical Diagnosis: the Use of Symptoms in the Diagnosis of Disease. By H. A. Hare, M.D., B.Sc. Illustrated. 1897. Price 21s. net.

LIPPINCOTT, J. B., COMPANY, Henrietta-street, Covent-garden, London.
Genito-Urinary Surgery and Venereal Diseases. By J. W. White, M.D., and E. Martin, M.D. Illustrated. 1897. Price 21s. net.

LONGMANS, GREEN, AND CO., Paternoster-row, London.
A Guide to the Clinical Examination of the Blood for Diagnostic Purposes. By Richard C. Cabot, M.D. Illustrated. 1897. Price 16s.

MACMILLAN AND CO., London.
A System of Medicine by many Writers. Edited by T. C. Allbutt, M.D., LL.D., F.R.C.P. Vol. II. 1897. Price 25s. net.

METHUEN AND CO., Essex-street, Strand, London.
Life in West London. By A. Sherwell. Second Edition. 1897. Price 2s. 6d.

MORTON & BURT, Edgware-road, London.
Descriptive Catalogue of the Pathological Museum of St. Mary's Hospital: Additions, 1891-1897. By J. Jackson Clarke, M.B. Lond., F.R.C.S. March 25th, 1897.

PRIBER, M., Berlin.
Zeitschrift für Criminal-Anthropologie. Von W. Wenge. Band I. Heft I. 1897.

REEVES, WM., Fleet-street, London, E.C.
Outspoken Essays on Social Subjects. By E. Belfort Bax. 1897.

SALLMANN, CARL, Basel und Leipzig.
Festschrift Eduard Hagenbach-Burckhardt; zu seinem 25-jahrigen Professoren-Jubiläum, von seinen Schülern. 1897.

SCIENTIFIC PRESS, Southampton-street, Strand, London, W.C.
The Burdett Series. No. 2. The Matron's Course: an Introduction to Hospital and Private Nursing. By Miss S. E. Orme. 1897. Price 1s.

SMITH, ELDER, AND CO., Waterloo-place, London.
Dictionary of National Biography. Edited by Sidney Lee. Vol. L. Russen—Scobell. 1897.
Collected Contributions on Digestion and Diet, with an Appendix on the Opium Habit in India. By Sir William Roberts, M.D., F.R.S. Vol. II. 1897. Price 5s.
Transactions of the Pathological Society of London. Vol. XLVII. 1896.

THE NEW SYDENHAM SOCIETY, London.
Lectures on Pharmacology. By Dr. C. Binz. Translated from the second German edition by Peter W. Latham, M.A., M.D. Vol. II. 1897.

THE SAVOY PRESS, 115, Strand, London.
Musa Medica: a Sheaf of Song and Verse. By J. Johnston, M.D. Edin. 1897. Price 2s. 6d.

VOGEL, F. C. W., Leipzig.
Diagnostik der Inneren Krankheiten. Von Dr. C. Vierordt. 5. Auflage. 1897.

WRIGHT, J., AND CO., Bristol.
The Swedish System of Physical Education: Its Medical and General Aspects. By Theodora Johnson. Illustrated. 1897. Price 3s. 6d. net.

Who's Who, 1897; edited by Douglas Sladen (Adam and Charles Black, Soho-square, London, W.C.)—Transactions of the Obstetrical Society of London, vol. 38, for the year 1896 (published by the Society, Hanover-square, London, 1897; price 10s.)—Transactions of the 18th Annual Meeting of the American Laryngological Association, May, 1896 (D. Appleton and Company, New York, 1897).—The Plough Court Pharmacy, Pharmaceutical Journal reprint (Pharmaceutical Journal Office, Serle-street, London, W.C., 1897; price 1s.)—Contingent Reversions: Approximate Values; by James P. Bourne (Lee and Nightingale, North John-street, Liverpool; price 3s.)—Drunkenness: Its Treatment on entirely new lines; by "Roentgen Ray," with preface by Dr. Sims Woodhead (Horace Marshall and Son, Temple-avenue, London, E.C., 1897; price 6d.)—Gillingham's Surgical Mechanist; Prospect House, Chard, Somerset; illustrated; 1897.

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward it to THE LANCET *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week for publication in the next number.*

ABBOTT, F. W., L.R.C.P. Lond., M.R.C.S., has been appointed Medical Officer to the Tooting Workhouse of the Wandsworth and Clapham Union.

ANDREW, J. GRANT, M.B., C.M. Glasg., has been appointed Assistant Surgeon to the Victoria Infirmary, Glasgow.

BEHRENDT, M. R. J., L.R.C.P., L.R.C.S. Edin., has been re-appointed Medical Officer of Health by the Brumby and Frodingham Urban District Council.

BOX, CHARLES RICHARD, B.Sc., M.D., B.S. Lond., M.R.C.P. Lond., F.R.C.S. Eng., has been appointed Resident Assistant Physician at St. Thomas's Hospital, vice Seymour G. Toller.

BRINCOR, W. T., M.D. Dub., M.Ch., has been re-appointed Medical Officer of Health by the Chippenham Town Council.

BUCH, JOSEPH, L.R.C.P., L.R.C.S. Edin., L.F.P.S. Glasg., has been re-appointed Medical Officer of Health by the Hunslet Rural District Council.

BURGESS, M. A., M.R.C.S., has been appointed Medical Officer for the Thorncombe Sanitary District of the Beaminster Union.

CRADDOCK, S., M.R.C.S., has been appointed Medical Officer to the Cottage Home Schools of the Bath Union.

DIXON, A. FRANCIS, M.B., B.Ch., B.A.O. Dub., has been appointed Professor of Anatomy at the University College of South Wales and Monmouthshire.

FOSTER, H. G., L.R.C.S. Edin., has been re-appointed Medical Officer of Health by the Swaffham Rural District Council.

FRANCIS, G. P., L.R.C.S. Edin., L.A.H. Dubl., has been re-appointed Medical Officer by the Brecon Rural District Council.

HAMERTON, G. A., F.R.C.S. Eng., has been appointed Medical Officer to the Inland Revenue Department, Somerset House, London.

HARVEY, GEO., L.R.C.P. Edin., L.R.C.S. Irel., has been re-appointed Medical Officer of Health by the Matlock Bath Urban District Council.

HOME, GEORGE, M.D., has been appointed a Clinical Assistant to Out-patients at the Chelsea Hospital for Women.

JENKINS, T. W., M.D., C.M. Glasg., has been appointed Assistant Surgeon to the Victoria Infirmary, Glasgow.

JONES, M. R., M.D. Glasg., has been re-appointed Medical Officer for the Devynnock Sanitary District of the Brecon Union.

JONES, RICHARD, M.D. Edin., D.P.H. Camb., has been re-appointed Consulting Medical Officer of Health by the Merioneth County Council, and Medical Officer of Health by the Ffestiniog Urban District Council.

KEIR, W. J., F.R.C.S., L.R.C.P. Edin., has been re-appointed Medical Officer by the District Council of Melksham.

KINGDON, J. R., B.A. Camb., M.R.C.S., L.R.C.P., has been appointed House Surgeon to the Weston-super-Mare Hospital and Dispensary, vice Gurney, resigned.

LOCKWOOD, JOSEPH, M.R.C.S., has been appointed Medical Officer of Health by the Whitley Upper Urban District Council.

LOW, CHARLES W., M.B., D.P.H., F.C.S., has been appointed Medical Officer of Health by the Stowmarket Urban District Council.

MACLEOD MUNRO, D. G., M.B., C.M. Edin., has been appointed Resident Physician to the Victoria Hospital for Consumption and Diseases of the Chest, Craigleith, Edinburgh.

MORCOM, A., L.R.C.S., L.M. Edin., has been re-appointed Medical Officer of Health by the Dunstable Town Council.

MORGAN, OWEN, L.R.C.P., L.R.C.S. Edin., L.F.P.S., L.M. Glasg., has been appointed Medical Officer for the Central District of the Newport Union, vice, T. Limbery, deceased.

MURPHY, WM., M.B., C.M. Edin., has been re-appointed Medical Officer of Health by the Holbeach Urban District Council.

NETTLE, WILLIAM, M.R.C.S., has been re-appointed Medical Officer of Health by the Liskeard Town Council.

NEWMAN, GEORGE, M.D. Edin., C.M., D.P.H. Camb., has been appointed Medical Officer of Health for the Parishes of Charterhouse, Furnival's Inn, and Staple Inn, London.

PHILLIPS, S. C., L.R.C.P. Lond., M.R.C.S., has been appointed Medical Officer for the North Peckham Sanitary District of the Camberwell Parish.

PINEO, E. G. D., M.R.C.S., L.R.C.P., has been appointed Provident Medical Officer to the Weston-super-Mare Hospital and Dispensary, vice A. L. Webb, resigned.

REES, D. V., L.R.C.P. Lond., M.R.C.S., has been re-appointed Medical Officer of Health by the Brecon Urban District Council.

SMITH, W. T., M.R.C.S., has been re-appointed Medical Officer of Health by the Lepton Urban District Council.

SOUTHEY, A. J., M.R.C.S., has been re-appointed Medical Officer of Health by the Eton Urban District Council.

STEPHENS, JAS. W., L.R.C.P. Lond., M.R.C.S., has been re-appointed Medical Officer of Health by the Cardigan Town Council.

SYMES, W. S., L.R.C.P., L.R.C.S. Irel., has been re-appointed Medical Officer of Health by the Newbold Urban District Council.

TAYLOR, C. H., M.B. Lond., M.R.C.S., has been appointed Honorary Surgeon to the Derbyshire Royal Infirmary, vice J. A. Sharp, resigned.

VERNON, WILLIAM, M.R.C.S., L.R.C.P. Edin., has been appointed Medical Officer for the Bitton District of the Warmley Union.

WADE, REGINALD, M.R.C.S., has been appointed Medical Officer of Health by the Highbridge Urban District Council.

WATERS, A. J. G., L.R.C.P. Edin., M.R.C.S., has been re-appointed Medical Officer of Health by the March Urban District Council.

WATTS, JAS. A. W., M.B., B.S. Durh., M.R.C.S. Eng., L.R.C.P. Lond., has been appointed Medical Officer to the Post Office at Hyde, vice G. W. Sidebotnam, resigned.

WIGGINS, CHARLES, L.R.C.P. Lond., M.R.C.S., has been re-appointed Medical Officer of Health by the Bexhill District Council.

WILLIS, C., M.R.C.S., has been re-appointed Medical Officer of Health for the Borough of Newark.

WRANGHAM, WILLIAM, M.B. Lond., M.R.C.S., L.R.C.P., has been appointed an Assistant House Surgeon to the Leicester Infirmary.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).

BRIGHTON AND HOVE LYING-IN INSTITUTION AND HOSPITAL FOR WOMEN.—House Surgeon, unmarried. Salary £80 per annum, with furnished apartments, board, gas, coals, and attendance.

BRIGHTON, HOVE, AND PRESTON DISPENSARY, Queen's-road, Brighton.—House Surgeon for the Northern Branch, unmarried. Salary £140 per annum, with furnished apartments, coals, gas, and attendance.

FURY DISPENSARY HOSPITAL.—Senior House Surgeon. Salary £100 per annum, with board, residence, and attendance.

CHELSEA, BROMPTON, AND BELGRAVE DISPENSARY, 41, Sloane-street, S.W.—Surgeon.

CHESTERFIELD AND NORTH DERBYSHIRE HOSPITAL AND DISPENSARY, Chesterfield.—Resident House Surgeon for two years. Salary £100 per year, with board, apartments, and laundress.

CLAYTON HOSPITAL AND WAKEFIELD GENERAL DISPENSARY, Wakefield.—House Surgeon, unmarried. Salary £90 per annum, with board, lodging, and washing.

COMBINED DISTRICT OF BATTLE, CUCKFIELD, EASTBOURNE, &c.—Medical Officer of Health, for three years. Salary £600 per annum, to include all travelling and other expenses. Applications to the Secretary, Haywards Heath.

GUEST HOSPITAL, Dudley.—Resident Assistant House Surgeon for six months. Board, lodging, and washing provided in the hospital.

HANTS COUNTY ASYLUM.—Third Assistant Medical Officer, unmarried. Salary £100 per annum, increasing to £125 after twelve months' service, with furnished apartments, board, washing, and attendance. Applications to the Committee of Visitors, Knowle, Fareham.

HOSPITAL FOR SICK CHILDREN, Great Ormond street, Bloomsbury, London.—Assistant Surgeon. Also House Physician for six months. Salary £20, with board and residence in the hospital. Also House Surgeon for six months. Salary £20, with board and residence in the hospital.

HUDDERSFIELD INFIRMARY.—Junior House Surgeon. Salary £40 per annum, with board, lodging, and washing.

NORTH-WEST LONDON HOSPITAL, Kentish Town-road.—Resident Medical Officer and Assistant Resident Medical Officer, for six months. A salary at the rate of £50 per annum for the senior post.

PARISH OF ROUSAY AND EGILSHAY, Orkney.—Resident Medical Officer. Salary £51 sterling per annum. Applications to the Clerk of the Parish Council, Rousay, Orkney.

ROTHERHAM HOSPITAL AND DISPENSARY.—Assistant House Surgeon for six months. Board, lodging, and washing provided.

SCARBOROUGH HOSPITAL AND DISPENSARY.—Assistant House Surgeon for six months. Salary at the rate of £50 per annum, with board and lodging. Stimulants and washing not provided.

SEAMEN'S HOSPITAL SOCIETY (Dreadnought), Greenwich, S.E.—House Physician. Salary £75 per annum, with board and residence.

STOCKTON AND THORNABY HOSPITAL, Stockton-on-Tees.—House Surgeon, non-resident. Salary £200 per annum.

TAUNTON AND SOMERSET HOSPITAL, Taunton.—Assistant House Surgeon for six months. Board, washing, and lodging in the institution provided.

WINDSOR ROYAL INFIRMARY.—House Surgeon, unmarried. Salary to commence at £100 per annum, with residence, board, and attendance.

WOLVERHAMPTON EYE INFIRMARY.—House Surgeon, for six months. Salary at the rate of £70 per annum, with rooms, board, and washing.

WONFORD HOUSE HOSPITAL FOR THE INSANE, near Exeter.—Assistant Medical Officer. Salary £150 per annum, with furnished apartments, board, and washing.

Births, Marriages, and Deaths.

BIRTHS.

DEVEREUX.—On April 11th, at North House, Tewkesbury, the wife of William C. Devereux, M.A., M.B., of a son.

GARDENER.—On April 16th, at Darley House, Sydenham, the wife of William F. Gardener, M.R.C.S., of a son.

MARRIAGE.

HOME—RICHARDSON.—On April 8th, at Holy Trinity, Upper Chelsea, by the Rev. A. L. Lilley, William Edward Home, Surgeon Royal Navy, to Ida Mary Geraldine, second daughter of the late J. Smith Richardson, Burnerana, co. Donegal, and of Mrs. Richardson, 41, Holbein House, Chelsea.

DEATHS.

WOODCOCK.—On April 9th, at Old Trafford, Jessie, eldest beloved daughter of Sam. Woodcock, M.D., aged 24 years.

IN MEMORIAM.

TOWNSEND.—On Sunday morning, April 19th, 1896, at 68, Queen's-gate, London, Mary Alice, only daughter of the late Thomas Ainsworth, of The Flosh, Cumberland, and for nineteen years the beloved wife of Thomas Sutton Townsend, of Clifton Manor, Warwickshire.

N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.

METEOROLOGICAL READINGS.

(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, April 14th, 1897.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Dry Bulb.	Wet Bulb.	Solar Radiation in Vacuo.	Maximum Temp. Shade.	Min. Temp.	Rainfall.	Remarks at 8.30 A.M.
April 8	29·99	N.E.	43	41	85	50	41	...	Cloudy
,, 9	30·06	S.W.	46	44	82	56	41	0·06	Cloudy
,, 10	30·07	N.	47	45	85	55	45	...	Cloudy
,, 11	30·25	S.E.	46	42	100	55	37	...	Cloudy
,, 12	29·76	S.W.	49	45	71	53	45	...	Overcast
,, 13	29·71	S.E.	51	48	86	61	47	0·04	Overcast
,, 14	29·57	S.W.	51	50	97	56	49	...	Raining

Medical Diary for the ensuing Week.

OPERATIONS.

METROPOLITAN HOSPITALS.

MONDAY (19th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (2 P.M., Ophthalmic 1.15 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), St. Mark's (2 P.M.), Chelsea (2 P.M.), Samaritan (Gynæcological, by Physicians, 2 P.M.), Soho-square (2 P.M.), Royal Orthopædic (2 P.M.), City Orthopædic (4 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), Westminster (2 P.M.).

TUESDAY (20th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), Guy's (1.30 P.M.), St. Thomas's (3.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London (2.30 P.M.), University College (2 P.M.), St. George's (1 P.M.), St. Mary's (2 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.).

WEDNESDAY (21st).—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing-cross (3 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), King's College (2 P.M.), St. Mary's (2 P.M.), National Orthopædic (10 A.M.), St. Peter's (2 P.M.), Samaritan (2.30 P.M.), Gt. Ormond-street (9.30 A.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.).

THURSDAY (22nd).—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), University College (2 P.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex (1.30 P.M.), St. Mary's (2.30 P.M.), Soho-square (2 P.M.), North-West London (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (Gynæcological, 2.30 P.M.)

FRIDAY (23rd).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. Mary's (2 P.M., Ophthalmic 10 A.M.), Cancer (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.).

SATURDAY (24th).—Royal Free (9 A.M. and 2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), University College (9.15 A.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), St. Mary's (10 P.M.), Cancer (2 P.M.).

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic Hospitals operations are performed daily.

SOCIETIES.

WEDNESDAY (21st).—ROYAL MICROSCOPICAL SOCIETY (20, Hanover-square, W.).—8 P.M. Mr. F. Enoch: Exhibition of Microscopical Entomological Specimens.

THURSDAY (22nd).—NEUROLOGICAL SOCIETY OF LONDON (Medical Society's Rooms, 11, Chandos-street, W.).—8.30 P.M. Clinical Meeting. Dr. Ferrier: A Remarkable Form of Nervous Disease occurring in Several Members of one Family.—Dr. Donkin: (1) A Man with Paralysis and Atrophy of one Leg; (2) A Boy with Paresis and Wasting of some Muscles of the Lower Extremities; (3) A Girl with Paresis and Paroxysmal Rigidity of the Lower Extremities.—Dr. Gossage: Progressive Muscular Atrophy commencing at the age of ten and a half years.—Dr. Lunn, Dr. Beevor, and Mr. Ballance: Cerebellar Tumour successfully Removed.—Dr. J. Taylor: Syringomyelia with Bulbar Symptoms.—Dr. Harris: Syringomyelia with probable Hæmorrhage into the Cavity.

FRIDAY (23rd).—CLINICAL SOCIETY OF LONDON.—8.30 P.M. Clinical Evening. The following cases will be shown:—Mr. C. J. Symonds: (1) A Case of Relapsing Myositis and Osteitis; (2) Subclavian Bruit in a Man aged twenty-five years; (3) A Boy from whose Jaw a Myeloid Sarcoma was Removed fifteen months ago without sacrifice of Bone.—Mr. F. Eve: (1) Congenital Dislocation of the Shoulder; (2) Arrest of Growth in Humeri.—Mr. H. Marsh: A Case of Hydronephrosis with Unusual Characters.—Dr. H. R. Smith: A Case of Amyotrophy of the Peroneal Type illustrating family predisposition to the affection.—Dr. J. K. Fowler: A Case of Myositis. Patients in attendance at 8 P.M.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

THURSDAY (22nd).—THE SANITARY INSTITUTE (Parkes Museum, Margaret-street, W.).—8 P.M. Mr. W. C. Tyndale: House Drainage.

SATURDAY (24th).—THE SANITARY INSTITUTE (Parkes Museum, Margaret-street, W.).—Mr. T. Walker (conducted by): Inspection and Demonstration at Beddington Sewage Farm, Croydon.

Notes, Short Comments, and Answers to Correspondents.

EDITORIAL NOTICE.

IT is most important that communications relating to the Editorial business of THE LANCET should be addressed *exclusively* "TO THE EDITORS," and not in any case to any gentleman who may be supposed to be connected with the Editorial staff. It is urgently necessary that attention be given to this notice.

It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this Office.

Lectures, original articles, and reports should be written on one side of the paper only, AND, WHEN ACCOMPANIED BY BLOCKS, IT IS REQUESTED THAT THE NAME OF THE AUTHOR, AND IF POSSIBLE OF THE ARTICLE, SHOULD BE WRITTEN ON THE BLOCKS TO FACILITATE IDENTIFICATION.

Letters, whether intended for insertion or for private information, must be authenticated by the names and addresses of their writers, not necessarily for publication.

We cannot prescribe or recommend practitioners.

Local papers containing reports or news paragraphs should be marked and addressed "To the Sub-Editor."

Letters relating to the publication, sale, and advertising departments of THE LANCET should be addressed "To the Manager."

We cannot undertake to return MSS. not used.

VERSION IN PREMATURE DELIVERY.

To the Editors of THE LANCET.

SIRS,—Will you kindly enlighten me as to when the above-named operation is deemed absolutely necessary, if it will not occupy too much of your time or space to do so, as the statements contained in text-books on the subject seem confusing? For instance, the operation of version (bipolar or internal) is described as if only applicable at or near term, while malpositions of the fœtus and accidental or unavoidable hæmorrhage are admittedly of frequent occurrence before term. One writer dismisses the subject of abortion during the fifth or sixth month with a few lines; another in a chapter on "Turning" says, "Of course, it is not necessary to turn a six months child"; while in a chapter on accidental hæmorrhage and when writing of its occurrence before term he says, "The child will be small and *unless lying transversely* its head or breach will come down into the cervix and dilate it," &c.; and further on, when speaking of the administration of ergot, "Ascertain first the position of the child, and *if transverse* correct it by abdominal palpation." In one sentence it is stated that "the uterus should not reach higher than half way between the ensiform cartilage and the umbilicus *after* the waters have escaped, and the head or breech presenting" (otherwise the position of the child is to be corrected); in another, "In short, in accidental hæmorrhage occurring before the uterus reaches higher than half way between the ensiform cartilage and the umbilicus, see that the canal is not contracted and that the child's long axis corresponds to that of the uterus. These conditions being present, *rupture* the membranes, put on a firm binder, and give ergot." I have emphasised the points which appear most confusing to myself.

I am, Sirs, yours truly,

April 5th, 1897. PERPLEXED.

*** Our correspondent's difficulty appears to us to arise from his endeavouring to establish any hard-and-fast rule as to when version should be performed. Each case must be considered on its own merits. Thus in placenta prævia the mother's safety is the chief consideration, and very possibly version may be the best means of dealing with a particular case. But it is not always necessary even in placenta prævia. The same applies to accidental hæmorrhage. Again, when premature labour is induced on account of contracted pelvis version is to be avoided if there is any reasonable chance of the child being delivered either spontaneously or with the forceps. But it may have to be resorted to. In cases of miscarriage at the fifth or sixth month in a normal pelvis the fœtus will probably be delivered whatever its position if there are good pains without any assistance; but if there is delay and the os is sufficiently dilated there can be no objection to seizing a foot and bringing it down. We believe if "Perplexed" will consider the circumstances of each case, instead of trying to have a stereotyped rule, he will have little difficulty in deciding as to when to perform version.—ED. L.

SMALL-POX AND VACCINATION.

To the Editors of THE LANCET.

SIRS,—With regard to the history of vaccination I have never seen any allusion to the remarkable story told by Captain W. Butler (now General Sir W. Butler, K.C.B., F.R.G.S.), in the fourth edition of his book, "The Great Lone Land," 1873 (Sampson Low, Marston, and Co.). I will take the liberty of making extracts from General Sir William Butler's book, not only to further glorify Jenner for his discovery, but also with the hope that anti-vaccinationists, by the force of sane reasoning, some day may be driven to see the effect of small-pox on a nation unprotected by vaccination and the value of this great man's work.

"Small-pox, in its most aggravated type, had passed from tribe to tribe"—speaking of the British American (Canadian) Indians of Saskatchewan on pages 20-2-3—"leaving in its track depopulated wigwams and vacant council lodges; thousands (and there are not many thousands all told) had perished on the great sandy plains that lie between the Saskatchewan and the Missouri. ..... They knew nothing of this terrible disease; it had come from the white man and the trader. ..... For eighty years these vast regions had known at intervals the deadly presence of this disease, and through that lapse of time its history had been ever the same. ..... The camp moved away, but the dread disease clung to it—dogged it with a perseverance more deadly than hostile tribe or prowling war party; and far over the plains the track was marked with the unburied bodies and bleaching bones of the wild warriors of the West. The summer which has just passed had witnessed one of the deadliest attacks of this disease."

"Fort Pitt"—(pages 250-1) one of the Hudson Bay Company forts, about 1000 miles from Lake Superior towards the Rocky Mountains—"was free from small-pox, but it had gone through a fearful ordeal; more than 100 Crees had perished close around its stockades. ..... From a spot many marches to the south the Indians had come to the fort in midsummer, leaving behind them a long track of dead and dying men over the waste of distance. 'Give us help,' they cried, 'give us help, our medicine-men can do nothing against this plague; from the white man we got it, and it is only the white man who can take it away from us.' But there was no help to be given, and day by day the wretched band grew less. Then came another idea into the red man's brain: 'If we can only give this disease to the white man and the trader in the fort,' thought they, 'we will cease to suffer from it ourselves.' So they came into the houses dying and disfigured as they were, horrible beyond description to look at, and sat down in the entrances of the wooden houses, and stretched themselves on the floors, and spat upon the door-handles. It was no use, the fell disease held them in a grasp from which there was no escape, and just six weeks before my arrival the living remnant fled away in despair."

"I now enter upon that portion of your Excellency's"—the Hon. A. G. Archibald, Lieutenant Governor of Manitoba (pages 368 and 368)—"instructions which has reference to the epidemic of small-pox in the Saskatchewan. ..... In the immediate neighbourhood of Fort Pitt two camps of Crees established themselves, at first in the hope of obtaining medical assistance, and failing in that—for the officer in charge soon exhausted his slender store—they appear to have endeavoured to convey the infection into the fort." This circumstance has been already alluded to. "..... It is singular that only three persons within the fort should have been infected with the disease, and I can only attribute this to the fact that Mr. John Sinclair had taken the precaution early in the summer (1870) to vaccinate all the persons residing there, having obtained the vaccine matter from a Salteaux Indian who had been vaccinated at the mission of Prince Albert, presided over by the Rev. Mr. Nesbit, some time during the spring."

I am, Sirs, yours faithfully,

Canterbury, April 4th, 1897. PUGIN THORNTON.

Distress.—We sympathise with our correspondent, but we cannot answer questions which should obviously be addressed to her medical man. The condition is an obstinate one, from which immediate relief must not be expected.

O. C.—We never prescribe or recommend individual practitioners. Our correspondent must consult his own medical man.

Recovery is entitled under the circumstances to make his usual charges.

A MONSTER.

FROM Leghorn comes the announcement on the 8th inst. of the birth of a monster, the mother being a poor water carrier of the city, and her offspring resembling from the head to the umbilicus a hare, and from the umbilicus to the lower extremities a normally developed infant. Dr. Botlari, who assisted at the birth, reports that the monster is alive; in place of eyes it has two cavities, its mouth and nose are similar to those of a hare, and it rejects by the one what is sent into the other and *vice versâ*. The mother volunteered the statement that during pregnancy in a house where she was carrying water she saw a hare cut up in quarters on the kitchen table, and was strongly impressed by the sight. Her health is good; while as to her offspring, in the more than probable event of its dying, it will be added to the local museum in illustration of the *lusus naturæ* which figure in Saint Hilaire's "Teratologie," as due to the impressionability of the pregnant.

A PLEA FOR THE CLIMATE OF THE CAPE PENINSULA IN CASES OF PHTHISIS.

To the Editors of THE LANCET.

SIRS,—So much has recently been written on the subject of South Africa as a health resort that some apology is almost needed for again bringing it before the profession. My excuse must be that in my daily practice I am constantly being made aware that a considerable amount of misconception still exists among English physicians on the subject. It is a most usual thing for patients consulting me on arrival in Cape Town, no matter at what time of the year it be, to say, "Where shall I go 'up country'? My doctor in England said, 'You must on no account remain in or about Cape Town.'" Now, I am very decidedly of opinion that phthisical patients arriving from England during the months October to March, as a rule, will do very much better by remaining in the Cape peninsula than by hurrying off to the excessive and trying heat of the higher altitudes of South Africa. This opinion, formed from my own experience and observation, is, I find, borne out not only by practitioners of long residence and experience in the Cape peninsula, but also by those resident in such places as Kimberley, Cradock, &c. These latter are unanimous in their view that during the summer months these higher altitudes in the colony are extremely trying to phthisical patients. The excessive heat, though the air be dry, seems to do more harm in the way of exhausting the phthisical patient than the dry air and sunshine do good. During the summer months in the Cape peninsula the rainfall is small, rarely exceeding six inches for the six months October to March, and the temperature is never excessive. The prevailing south-east wind is dry and cool, and in the suburbs of Cape Town, such as Wynberg, Newlands, or Sea Point, the boisterousness which the wind occasionally assumes can always be avoided. In an excellent article on this subject published in the *South African Medical Journal* of May, 1895, Dr. C. F. K. Murray, of Wynberg, says: "It is want of precise knowledge ..... that leads to the idea, 'Get away at once up country, and don't stop in the Cape peninsula.' I maintain that such is bad advice and must be qualified by careful consideration of the patient's actual condition, the season of the year, and the type of the case." My own experience has proved to me conclusively that cases of phthisis which are likely to be influenced by climate do extremely well in the Cape peninsula during the summer months, while I am equally certain that much harm is often done to such cases by hurrying them into the blazing plains of the Karoo and higher "plateaus," there to exhaust themselves in the unaccustomed heat. I have not in this short note sought to introduce statistics showing how equable is the climate of the Cape peninsula during the months of October to March, because such are easily available to all; but I feel, judging by my own experience and that of many of my *confrères*, that the logical deductions have not always been drawn from these figures. To conclude, then, I would recommend that early phthisical cases leaving England from October to March—and it is in these months that most do leave—should remain in and about the Cape peninsula, certainly not going beyond Ceres, until March. With May our winter rains set in, and it is then most advisable that all chest cases should seek a habitat beyond our winter rain-belt in the higher altitudes.

I am, Sirs, yours truly,

E. BARNARD FULLER, M.B., C.M., F.R.C.S. Edin.

Cape Town, Jan. 25th, 1897.

H. H.—Brown bread is made with bran, which contains a high proportion of mineral matters, but it is doubtful whether bran possesses any advantages from the dietetic point of view. It escapes digestive action and acts as a mechanical irritant in the intestinal tract. The special bread our correspondent mentions is free from irritating branny particles, but is considerably enriched by the addition of a notable proportion of wheat-germ, which is highly nitrogenous.

SOUTHALL'S NEW SANITARY TOWEL.

THE well-known sanitary towel for ladies' use, supplied by Messrs. Southall Brothers and Barclay of Birmingham, has from time to time undergone various improvements, and the same makers have now introduced a thoroughly serviceable modification at a much lower price for the benefit of those who do not care to obtain the superior qualities. The new towel consists essentially of an absorbent material made by a patented process from finely divided cellulose mixed with a soft white infusorial earth ("Dimatos") lighter than magnesia, and capable of absorbing upwards of six times its weight of liquids. This powder under the microscope is seen to consist of infusorial skeletons. It is free from starch and does not fuse on heating, as would be the case if borax were present. It is highly diffusive, as well as absorbent, and when enclosed in an envelope of absorbent wool wadding forms a pad peculiarly well adapted for the purpose for which it is intended. Cellulose by itself, when manufactured into wadding, loses its soft and elastic properties as soon as it is wetted, becoming, in fact, almost a pulp, but when it is combined with "dimatos" the compound possesses all the valuable diffusive properties of cellulose, together with the elasticity of absorbent cotton. The towels are about nine inches long and three inches wide, and have loops at each end for the purpose of fastening them in position. They are sold in packets of twelve for sixpence, so that the price of each towel is a halfpenny.

INTESTINAL IRRIGATION IN PUERPERAL ECLAMPSIA.

To the Editors of THE LANCET.

SIRS,—An apparatus for rectal irrigation similar to that described by Dr. R. C. Kemp in the *New York Medical Journal*, and referred to at page 1038 of THE LANCET for April 10th, was used by me about two and a half years ago in a case of puerperal eclampsia, pending completion of delivery. On this occasion I obtained very marked success with an improvised apparatus. I made a note of it at the time and had a nozzle constructed, but no further cases of eclampsia have occurred in my practice. The apparatus might have been used in a case of uræmic convulsions, complicated with glycosuria, which subsequently came under my care, but ordinary measures fortunately proved successful, and as long as the well-trodden paths of treatment lead to the desired end I prefer to keep to them, rather than to follow new lines.

I am, Sirs, yours faithfully,

G. G. GIDLEY, L.R.C.P. Lond., M.R.C.S. Eng.

Cullompton, Devonshire, April 11th, 1897.

A Constant Reader will probably get the information he requires by writing to the Laboratory Principal of the Royal Agricultural Society of England, 22, Tudor-street, New Bridge-street, London, E.C.

THE AFTER-CARE ASSOCIATION.

THIS excellent society has charged itself with the duty of looking after poor patients discharged recovered from asylums for the insane. It is the only one of its kind in the kingdom, and deserves every support. At the annual meeting held recently the chair was taken by the Archdeacon of London, and among those present were Dr. Henry Rayner and Dr. Nicolson. The report showed that 135 patients had been helped in various ways, and the accounts, we are glad to see, show a balance on the right side; but with a larger income much more work could be done, and we earnestly hope that the appeal of the committee for the coming year will meet with a generous response.

Common Sense.—The origin, though unknown, is not more mysterious than the origin of most other diseases, and the mode of transmission is well known. All the recognised text-books supply the answers to the questions.

B. R. D.—We think that B. should resign the case to A., unless his further attendance in consultation be desired.

A PHOTOGRAPHIC EXPOSURE.

IN the discussion which followed Mr. Campbell Swinton's interesting demonstration of improved x ray apparatus at the Camera Club on April 12th one of the speakers mentioned that he possessed a fluorescent screen measuring 6 ft. by 1½ ft. It is intended to show the bones and soft parts of a full-length figure all at one view, and on an occasion when the apparatus was being inspected by a number of persons it was the means of creating an embarrassment almost beyond the power of words to describe. A lady having incautiously passed in the line of the rays was suddenly displayed on the large screen, and as dress materials are very transparent to the rays her costume, of course, did not count for much in the picture!

Mr. R. Denison Pedley will obtain the information he requires by communicating directly with Professor E. Waymouth Reid, University College, Dundee.

ERRATUM.—The address of the importers of the Jyree tea, Messrs. A. C. Irwin and Co., is Billiter-buildings, Billiter-street, E.C., and not Great Tower-street, as stated in our issue of April 10th.

COMMUNICATIONS not noticed in our present issue will receive attention in our next.

During the week marked copies of the following newspapers have been received:—*Somerset County Herald, Hereford Weekly Times, Sussex Daily News, Wigan Examiner, Lincoln Gazette, Suffolk Chronicle, South-Eastern Gazette, Citizen, Scotsman, Times of India, Wolverhampton Chronicle, Pioneer Mail, Devon Weekly Times, Leicester Daily Post, Portsmouth Times, Architect, Hampshire Post, Derby Mercury, Manchester Guardian, Kentish Mail, Liverpool Daily Post, Builder, Isle of Wight Times, Ripley Advertiser, Alcester Chronicle, Leeds Mercury, Woburn Reporter, Ilfracombe Gazette, Bradford Argus, Birmingham Gazette, Poole Times, Chatham News, Newbury Weekly News, East Anglian Times, Brighton Gazette, Bristol Mercury, Dundee Courier, Coleshill Chronicle, Kidderminster Sun, Western Mail, Cork Constitution, Hastings Times, Herne Bay Argus, City Press, Reading Mercury, Weekly Free Press and Aberdeen Herald, Hertfordshire Mercury, Mining Journal, Sanitary Record, Evening Citizen (Glasgow), Surrey Advertiser, Tenby and County News, Local Government Journal, Levant Herald, Cape Times, Brisbane Courier, Berkshire Chronicle, Singapore Free Press, Watford Observer, Watford and West Herts Post, Times of India (Bombay), Yorkshire Post, Express and Star, Wellingborough News, Yarmouth Mercury, Merthyr Times, Chesham Examiner, &c., &c.*

Communications, Letters, &c., have been received from—

A.—Dr. J. M. Atkinson, Hong-Kong; Dr. A. P. de Andrade, Goa, India; Dr. W. Alexander, Liverpool; Messrs. Armbrecht, Nelson, and Co., Lond.; Anglo-Swiss Condensed Milk Co., Lond.; American Public Health Association, Philadelphia, Sec. of; After-Care Association, Lond., Sec. of; Apothecaries' Hall, Dublin, Sec. of.

B.—Beck Brewing Co., Liverpool; Blackburn and East Lancashire Infirmary, Sec. of; Dr. C. Black, Glasgow; Messrs. E. V. Baylis and Co., Lond.; Dr. I. B. Berkart, Lond.; Mr. L. A. Bidwell, Lond.; Mr. J. F. Briscoe, Alton; Dr. A. Bronner, Bradford; Dr. A. G. Blomfield, Exeter; Dr. J. Baker, Paris; Messrs. Burroughs, Wellcome, and Co., Lond.; Mr. E. Brandford, Lond.; Mr. E. Buxton, Liverpool; Mr. H. Brandreth, Dickleburgh; Brussels International Exhibition (British Section), Lond., Hon. Executive Commissioner of; Birmingham General Hosp., House Governor of; Messrs. Belshaw and Co., Lond.; Mrs. E. D. W. Baillie, Sansalito, U.S.A.

C.—Mr. T. J. Croke, Harrogate; Messrs. T. Christy and Co., Lond.; Messrs. Coxeter and Son, Lond.; College of Physicians of Philadelphia, Curator of; Clinical Society of London, Asst. Sec. of; Professor Crookshank, East Grinstead; A Common Sense Layman, Lond.; Chesterfield Hosp., Sec. of; Messrs. T. Colman and Co., Lond.

D.—Mr. T. Dixon, Lond.; Democritus, Lond.; Devonshire Hospital and Buxton Bath Charity, Sec. of; Mr. H. R. Davies, Lond.; D. R. D., Coldstream, N.B.; Mr. T. Davies, Lond.

E.—Mr. A. V. Evans, Folkestone; Electric Ozone Syndicate, Lond.

F.—Mr. P. J. Freyer, Lond.; Friend's Association for Abolishing State Regulation of Vice, Lond., Sec. of; Dr. F. D. Fisher, Frodsham.

G.—Mr. G. Gresswell, Grimsby; Guest Hosp., Dudley, Sec. of; Mr. M. Gloag, Perth.

H.—Mr. J. Heywood, Manchester; Messrs. H. G. Harding and Co., Lond.; Mr. J. Harder, Manchester; Messrs. C. J. Hewlett and Son, Lond.; Hotel Pension Frei, Davos-Platz, Switzerland; Mr. H. Hopewell, Manchester; Dr. W. K. Hunter, Glasgow; Mr. J. Hall, Naas; Mr. C. M. Holloway, Lond.

I.—International Congress of Medicine, Moscow, Committee of.

J.—Mr. H. C. Jackson, Lond.; J. H. L., Lond.; Messrs. A. Jacob and Co., Lond.

K.—Mr. R. C. B. Kevin, Lond.; Messrs. Knight, Frank, and Rutley, Lond.; Rev. J. B. Kite, Billingford; Dr. N. S. Kerr, Lond.; Mr. Kershaw, Lond.; Dr. E. Kingscote, Lond.; Mr. C. S. Kirton, Leigh-on-Sea.

L.—Dr. H. H. Littlejohn, Sheffield; Mr. D. V. Lowsley, Reading; London and Provincial Bank, Leyton-stone; London and Counties Medical Protection Society, Lond., Hon. Sec. of; Mr. H. K. Lewis, Lond.

M.—Dr. P. W. MacDonald, Dorchester, Medicus, doscombe, M. O., Lond.; Matinée Theatre, Lond., Managing Director of; Dr. P. Manson, Lond.; Messrs. Mellier and Condrup, Lond.; Mr. W. Mavadam, Lond.; Dr. H. W. G. Macleod, Lond.; Mr. J. MacMunn, Lond.; Mr. J. H. Morgan, Lond.; Messrs. E. Marlborough and Co., Lond.; M. D., Camberwell, Medical Society of Victoria, Melbourne, Sec. of.

N.—Dr. J. Niven, Manchester; Messrs. J. Norrenberg and Co., Lond.; Newsvendors' Benevolent and Provident Institution, Lond., Sec. of; Messrs. Neyroud and Son, Lond.; Dr. R. Neale, Lond.

O.—The Open Court Publishing Co., Chicago.

P.—Dr. D. E. Powell, Cardiff; Dr. E. P. Paton, Lond.; Messrs. C. Pool and Co., Lond.; Mr. F. T. Paul, Liverpool; Mr. R. D. Pedley, Lond.; Mr. T. F. Pearse, Southsea.

Q.—Queen Margaret College, Glasg., Sec. of.

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S.—Mr. T. Smith, Lond.; Mr. J. Sellers, Lond.; Messrs. Street and Co., Lond.; Stockton and Thornaby Hosp., Stockton-on-Tees, Sec. of; Surgical and Medical Home, Maida Vale, Matron of; J. T. Segrue, Ltd., Lond.; Messrs. S. Smith and Co., Lond.; St. John Ambulance Association, Lond., Manager of; Dr. W. K. Sibley, Lond.; St. George's Hosp., Lond., Sec. of; *Surveyor*, Lond., Editor of; Dr. J. G. Smith, Bristol; Dr. H. Simpson, Colwyn Bay; Mr. C. H. Sers, Lond.; Dr. J. Struthers, Edin.

T.—Dr. W. J. Tyson, Folkestone; Messrs. J. Travers and Sons, Lond.

U.—University of Durham College of Medicine, Newcastle-on-Tyne, Sec. of.

V.—Messrs. G. Van Abbott and Sons, Lond.; Victoria Institute, Lond., Hon. Sec. of.

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Y.—Dr. R. Young, Oldham; Mr. Yeo, Lond.

Letters, each with enclosure, are also acknowledged from—

A.—Mr. P. R. Anderson, Fern Hill; Dr. J. Adams, West Malling; Andre, Lond.; Assistant, Lond., A., Lond.; alpha, Lond.

B.—Mr. H. Brown, Buckhurst Hill, British Lying-in Hosp., Lond., Sec. of; Mr. H. R. H. Bigg, Lond.; Messrs. J. Bell and Sons, Nottingham; Mr. R. Baker, Lond.; Dr. J. B. Burnett, Watford; Messrs. Bensor and Co., Lond.; Dr. Saml. Breck, Washington, U.S.A.

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D.—Dr. Davies, Sutterton; Messrs. Dowie and Marshall, Lond.; Dr. N. B. Dastoor, Bombay; Doctor, Castle White.

E.—Mr. S. Elsmere, Child Okeford; Edinburgh School of Medicine for Women, Dean of; Dr. J. Eyre, Lond.; E. W., Manchester.

F.—Surg.-Col. E. Fairland, Gravesend.

G.—Dr. J. Gairdner, Crieff, N.B.; G. T. G., Lond.; Mr. D. Gilbert, Lond.; Mr. J. Gillingham, Chard; Dr. L. G. Guthrie, Lond.; Grove House, Everton, Liverpool.

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L.—Mr. G. Lane, St. Denis; London Association of Nurses, Lady Supt. of; Dr. Lowe, Brynmawr.

M.—Mr. S. R. Merry, Hemel Hempstead; Dr. A. F. Mackenzie, Inverness; Dr. MacRae, Alness; Mr. S. Mackey, Hodnet; M.D., Bradford; Mr. G. H. Masins, Lond.; M.R.C.S.E., Bildeston; Miles, Lond.; M. M., Lond.; Dr. T. H. Morton, Sheffield; Metropolitan Machinists' Co., Lond.; Dr. Mackay, Crook, Mutual Life Insurance Co. of New York, Lond., General Manager of; M.B., Stoke-on-Trent; Dr. W. Murrell, Lond.; Magnus, Lond.; Mr. D. G. M'Leod-Munro, Edin.; Medicus, Lond.; Malo, Lond.

N.—N. O. Q., Lond.; Mr. J. V. R. Naidu, Pudukotah, India.

O.—Onyx, Lond.; Oriers, Lond.; Omicron, Lond.; Old Park Hall Retreat, Walsall.

P.—Phrenic, Lond.; Practice, Lond.

R.—Mr. J. H. Robertson, Steeple Claydon; Messrs. Reynolds and Branson, Leeds; Rotherham Hosp., Sec. of; Dr. T. W. Reid, Canterbury; Radius, Lond.

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